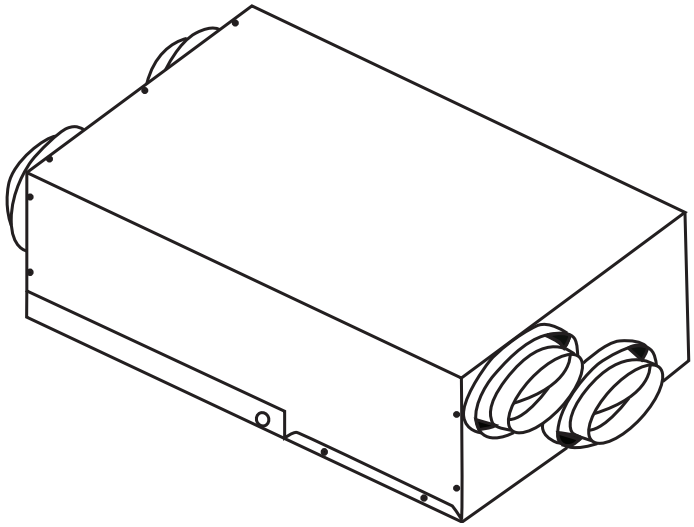
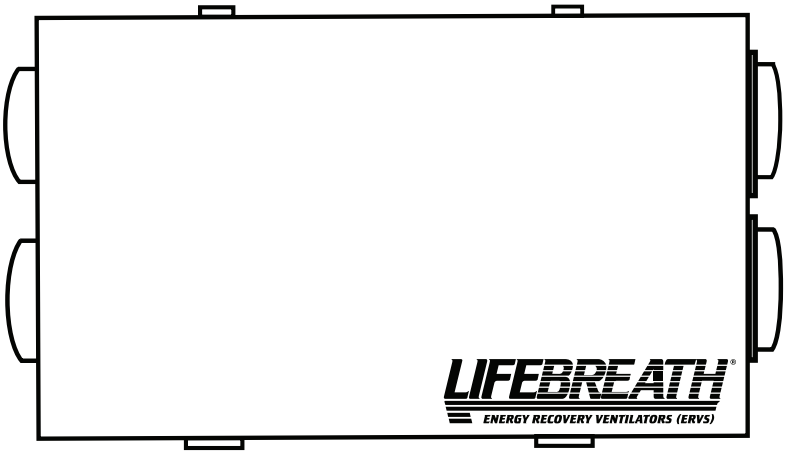
LIFEBREATH®

ENERGY RECOVERY VENTILATORS (ERVS)

Operation and Installation Manual



Model
120ERV



Models
150 ERV
200ERV

Energy Recovery Ventilator (ERV)

Installation and wiring to be in accordance with
CEC, NEC and local electrical codes.
Important: Read and save these instructions.

ISO 9001 REGISTERED · C SA US Conforms to UL Standards · HRAI YOUR ENVIRONMENT. OUR EXPERTISE. MEMBER COMPANY · CHBA Member · ® 2100 HVI CERTIFIED

69-ERVND

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Table of Contents

Getting to Know your Energy Recovery Ventilator (ERV)
Selecting the Ventilation Rate that is Right for You
How the Dehumidistat Works
Glossary and Additional Information
Warranty....3
The Lifestyle Ventilation Control Part #99-BC01....4
The Lifestyle Digital Control Part # 99-DX01(Optional)....5

The Lifestyle Digital Control Part # 99-DXPL01
Optional Timers....6
The Lifestyle Programmable Control Part # 99-LS01....7
Technical Data - Model 120ERV....8
Technical Data - Model 150ERV....9
Technical Data - Model 200ERV....10
Installation Methods....11
Installation Diagrams....12-17
Installation Requirements....18
Suspend the Unit with the Adjustable Hanging Straps....19
Weatherhood Installation
Dual Hood Part #99-190....20
Grilles....21
Grille Fittings....22
Installation of the Main Control....23
Installation and Operation 20/40/60/ Minute Timers....24

Interlocking the ERV Operation to an Airhandler/Furnace Blower
Setting "Standby" when using a Main Control
Operating the ERV without a Main Control
and Adding Dry Contact Controls....25
Balancing the Air Flows....26
Balancing the Air Flows with a Pitot Tube....27
Balancing Collar Instructions (150ERV and 200ERV)....28
Maintenance Routine for ERV....29
Troubleshooting your ERV System....30
Wiring Diagrams....31-32

IMPORTANT -
PLEASE READ THIS MANUAL BEFORE INSTALLING UNIT.

NOTE

• Due to ongoing research and product development, specifications, ratings and dimensions are subject to change without notice.

CAUTION ⚠

Before installation, careful consideration must be given to how this system will operate if connected to any other piece of mechanical equipment, i.e. a forced air furnace or air handler, operating at a higher static. After installation, the compatibility of the two pieces of equipment must be confirmed, by measuring the air flows of the ERV, by using the balancing procedure found in this manual.
NEVER install a ventilator in a situation where its normal operation, lack of operation or partial failure may result in the backdrafting or improper functioning of vented combustion equipment.

WARNING

• Disconnect the power from the unit before cleaning or servicing.

• To prevent electrical shock, it is *extremely important* to confirm the polarity of the power line that is switched by the safety (disconnect) switch. The hot line (black) is the proper line for switching. Use either a voltmeter or test lamp to confirm the absence of a voltage between the disconnect switch and ground (on the cabinet) while the door is open. This procedure must be followed, as dwellings are occasionally wired improperly. Always enure the proper grounding of the unit.

ATTENTION

• Do not apply electrical power to the unit until after the completion of the installation (including the installation of low voltage control wiring).

• Ensure the Installation and wiring is in accordance with CEC, NEC, and local electrical codes.

• Due to ongoing research and product development, specifications, ratings and dimensions are subject to change without notice.

• Plug the unit into a standard designated (120 VAC) electrical outlet with ground.

•The use of an extension cord with this unit is not recommended. If the installation requires further wiring, have a licensed electrician make all of the electrical connections. The recommended circuit is a separate 15 amp/120 volt circuit.

Getting to Know your Energy Recovery Ventilator (ERV)

Thank you for purchasing a LIFEBREATH® Energy Recovery Ventilator (ERV). The ERV provides fresh air to your home while recovering energy from the air it exhausts.
There are numerous benefits to a properly installed, operated, and maintained ERV:

- exhausts the stale, contaminated air, found in today's tight buildings.
- recovers the majority of the energy contained in the exhausted stale air.
- uses the recovered energy to preheat or precool the fresh outdoor air introduced into the house.
- distributes the fresh air throughout your home.

Selecting the Ventilation Rate that is right for You

The modes of operation and speeds are used to adjust your indoor ventilation rate. Experiment with the ventilation levels in your home to evaluate the ideal amount of ventilation to suit your home and personal preferences. Your Lifebreath ERV main control has
2 Modes of Operation* and 5 speeds on each mode.

I. CONTINUOUS VENTILATION

This mode of operation provides continuous ventilation within the home. You may, for example, select *Continuous Ventilation* at a low speed (speeds 1 or 2) for normal operation and increase to a higher speed (speeds 3 to 5) during increased activity levels, such as cooking and showering, etc.

II. 20 MINUTES ON, 40 MINUTES STANDBY

This mode of operation provides 20 minutes of ventilation each hour. You can use this ventilation mode at low speed for low household activity levels or when the home is unoccupied.

How the Dehumidistat Works

High indoor humidity levels, during the heating season, have become a problem in many well insulated, tight homes. Excessive condensation on the windows is a visual sign of high indoor humidity levels. High indoor humidity levels can result in mold and mildew and the eventual degradation of the building structure itself.

Your ERV reduces indoor humidity levels when the outdoor air is drier than the indoor air. These conditions usually occur during the heating season when outdoor temperatures are less than 15°C (59°F). During the heating season, the operation of the ERV may reduce indoor humidity levels sufficiently to eliminate the need for further dehumidification.
If your home requires further dehumidification, use the dehumidistat feature located on the main control. This feature aggressively addresses high indoor humidity levels by initiating high speed ventilation when the indoor humidity levels rise above the adjustable set point on the control.
Refer to the main control instructions located in the *Operation and Installation Manual* for instructions on how to set the dehumidistat.
The dehumidistat function should be set to OFF for all seasons except the heating season, because a dehumidifying effect occurs only when the outdoor air is dryer than the indoor air. Set the RH level to 80 to turn the dehumidistat OFF. (Refer to the control instructions for information on how to set the Dehumidistat).

Glossary and Additional Information

ERV - a Energy Recovery Ventilator (ERV) is designed to provide fresh air into a building while exhausting an equal amount of stale air. During the winter months, heat recovered from the stale air, before it is exhausted to the outdoors, warms the incoming cold fresh air. During the summer months, when the indoor space is air conditioned, the ERV helps to cool the incoming fresh air with the cool exhausted stale air.
MAINTENANCE ROUTINE - Homeowner maintenance should be performed as per *"Maintenance Routine for ERV"* located in the *Operation and Installation Manual*.

OPERATION AND INSTALLATION MANUAL - Contains instructions and important information regarding your ERV and controls. You can download the manual at www.lifebreath.com.

SELF-TEST - Each time the ERV is powered/energized, the self-test function automatically initiates. The ERV cycles through the available speeds and tests the damper motor operation. The ERV defaults back to the previous operational mode and speed selection after the self-test (approximately 60 seconds in duration).
STANDBY (Speed 0) - The ERV is powered/energized and waiting for ventilation to be initiated by either an external control (i.e. timer) or the dehumidistat. Set the main control to speed 0 to set the ERV in standby.
TIMERS - These optional controls may be installed at specific exhaust locations (bathrooms etc.) to initiate high speed ventilation.

Warranty

Units carry a ten (10) year warranty on the enthalpic (ERV) core and a five (5) year replacement parts warranty.

Register for your warranty at:
www.lifebreath.com or phone 1-855-247-4200 (toll free)
NOTE: Airia will require the ERV Model and Serial Number(s) for the registration of your ERV.

The Lifestyle Ventilation Control Part #99-BC01 (Optional Control for 120ERV only)

The Lifestyle RNC Ventilation Control offers ON/OFF, High Speed/Low speed plus an electronic dehumidistat.

Key Features

- 2 Speed Fan setting (Low/High)
- Electronic Dehumidistat (disabled on 120ERV)
- Instruction Card is inserted in the control
- Slim-line design
- Connect to 3 wire 20 gauge low voltage wire.

Turning on the Control

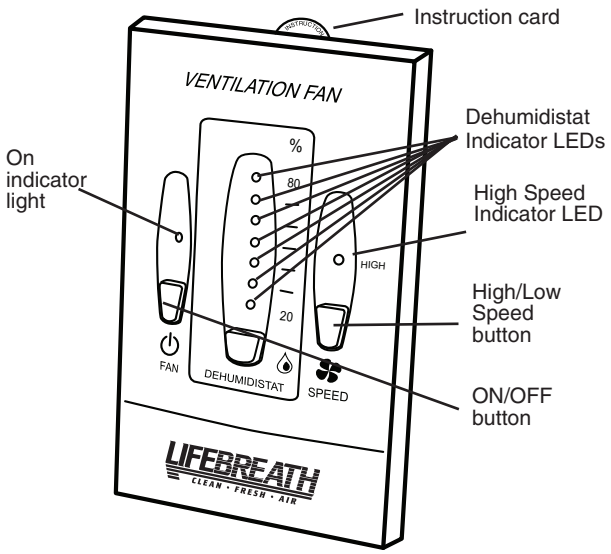
Press and release the ON/OFF button. The "ON Indicator Light" will illuminate.

Adjusting the Ventilation Speed

The unit will normally operate at low speed. Press and release the SPEED button to initiate high speed ventilation. The "High Speed Indicator LED" will illuminate.

Humidity Control

Dehumidistat is disabled on models 120ERV, 150ERV and 200ERV.



Note

***Install a jumper between 2 (ON) and 3 (RED) on the HRV terminal block to configure the ON/OFF button to ON/STANDBY. Refer to "Setting Standby when using a Main Control" in this manual.**

The Lifestyle Digital Control Part #99-DX01 (Optional Control for 120ERV only)

The Lifestyle Digital Control offers advanced features to control your home's ventilation.

Key Features

- 2 Speed Fan setting (Low-1/High-2)
- Standby setting (Fan speed 0)
- Electronic Dehumidistat (disabled on models 150ERV and 200ERV)
- Two Selectable Modes of Operation

  20 min. ON / 40 min. OFF

  Continuous Ventilation
- 20 / 40 /60 High Speed override button
- Instruction Card is inserted in the control
- Easy to read LCD Screen
- Slim-line design
- Connect to 3 wire 20 gauge low voltage wire

Setting the Control

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press the SET button.
3. The “FAN” symbol flashes. SCROLL (by using the Up/Down arrows) to select the desired fan speed (0, 1 or 2). Press the SET button.
4. “VENT”, “20/40”, “20/40 RECIRC”, “RECIRC”or “OFF” will flash. SCROLL to select the desired mode of operation. Press SET button. *RECIRC is not available on all models. **Timers will not function when mode of operation is set to “OFF”.

Setting the Dehumidistat

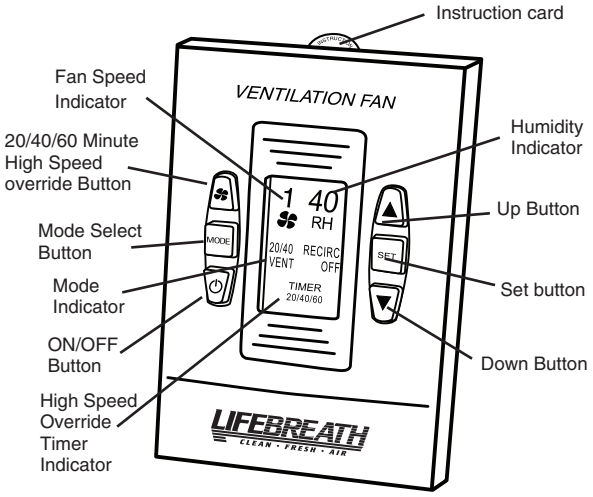
The dehumidistat is disabled on models 120ERV, 150ERV and 200ERV.

20/40/60 Minute High Speed Timer

This function temporarily initiates high speed ventilation for 20, 40 or 60 minutes.

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.

2. Press FAN button once for 20, two times for 40, three times for 60 minutes, and four times to cancel the timer.



Connects to 3 wire 20 gauge low voltage wire

The Lifestyle Digital Control Gives you

2 Mode Selection

The Lifestyle Digital Control has 2 Operational Modes* and 2 speeds on each mode to adjust indoor ventilation levels. Experiment with the ventilation levels in your home to evaluate the best amount of ventilation to suit your home and preferences.

I. Continuous Ventilation Mode

This is the most popular mode since it provides continuous ventilation within the home. You may, for example, select Continuous Ventilation at high speed for high household activity levels or Continuous Ventilation for lower activity levels.

II. 20 minutes ON, 40 minutes OFF Mode

This Operational Mode will provide 20 minutes of ventilation each hour. You may wish to use this ventilation mode in low speed for low household activity levels or if the home is unoccupied.

The Lifestyle Digital Control Part # 99-DXPL01 (Wall Control included with 150ERV and 200ERV only)

The **Lifestyle Digital Control** is fully digital and allows you to easily control your home's ventilation.

Key Features

- 5 Speed Fan setting
- Electronic Dehumidistat (disabled on models 150ERV and 200ERV)
- Two Selectable Modes of Operation
  20 min. ON / 40 min. off
  Continuous Ventilation
- 20 / 40 /60 High Speed override timer
- Service/Maintenance Reminder display
- Backlit LCD screen is easy to read

Setting the Control

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press the SET button.
3. The “FAN” symbol flashes. SCROLL (by using the Up/Down arrows) to select the desired fan speed (0, 1 or 2). Press the SET button.
4. “VENT”, “20/40” or “OFF” will flash. SCROLL to select the desired mode of operation. Press SET button. . **Timers will not function when mode of operation is set to “OFF”.

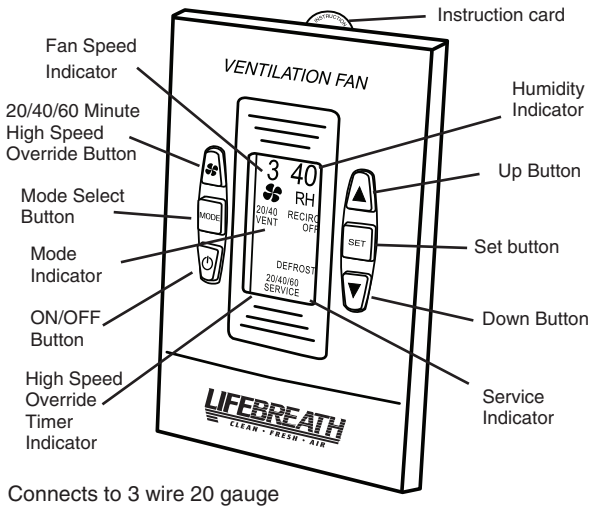
Setting the Dehumidistat

The dehumidistat is disabled on models 150ERV and 200ERV.

20/40/60 Minute High Speed Timer

This function temporarily initiates high speed ventilation for 20, 40 or 60 minutes.

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.



2. Press FAN button once for 20, two times for 40, three times for 60 minutes, and four times to cancel the timer.

Service Indicator

A ‘SERVICE’ indicator displays once every 4 months. Refer to "Maintenance Routine" in the Operation & Installation manual.

To reset the service indicator:

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press and release the Up and Down buttons simultaneously. The “SERVICE” icon will flash for 5 seconds.
3. Press SET within the 5 seconds and the service indicator will reset.

Optional Timers (for all ERV models)

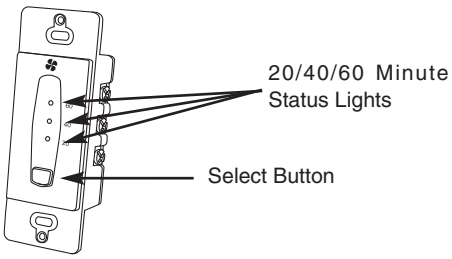
The timer will override the Operational Mode (regardless of the setting) and initiate high speed ventilation. Upon completion of the timer cycle, the ERV will return to your selected Operational Mode and speed setting.

Lifestyle 20/40/60 Minute Timer
Part # 99-DET01

Initiates high speed ventilation for 20, 40 or 60 minutes. The 20/40/60 Minute Status Lights indicate high speed operation.

Lockout Mode is useful if you wish to disable the timer. Set lockout by holding the Select Button for 5 seconds. Unlock by holding for 5 seconds.

Connect to 3 wire 20 gauge low voltage wire. Mounts in a standard 2" x 4" electrical box.

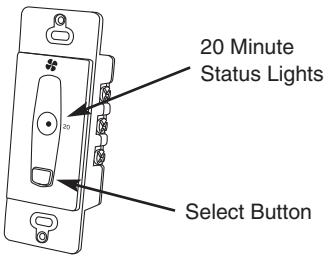


Lifestyle 20 Minute Timer
Part # 99-20M01

Initiates high speed ventilation for 20 minutes. The 20 Minute Status Light indicates high speed operation.

Lockout Mode is useful if you wish to disable the timer. Set lockout by holding the select button for 5 seconds. Unlock by holding for 5 seconds.

Connect to 3 wire 20 gauge low voltage wire. Mounts in a standard 2" x 4" electrical box.



The Lifestyle Programmable Control Part # 99-LS01 (Optional for 150ERV and 200ERV only)

The optional **Lifestyle Programmable Control** is fully digital and allows you to program when and how much fresh air will be entering your home.

Key Features

- 24 / 7 programmable ventilation • 4 programmable events per day
- 5 Speed Fan setting • Electronic Dehumidistat (disabled on models 150ERV and 200 ERV)
- Two Selectable Modes of Operation
  20 min. ON / 40 min. OFF
  Continuous Ventilation
- 20 / 40 /60 High Speed override timer
- Service/Maintenance Reminder display
- Easy to read Backlit LCD screen

Setting Date & Time

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press and release the MODE button until "TIME" and "SET" appear on the screen. Press SET Button.
3. The letter for the day of the week flashes. SCROLL (using Up/Down arrows) to the correct day of the week. Press the SET button.
4. The hour and "AM" or "PM" flashes. SCROLL to the correct hour and press the SET button.
5. The minutes will flash. SCROLL to the correct minute. Press the SET button.

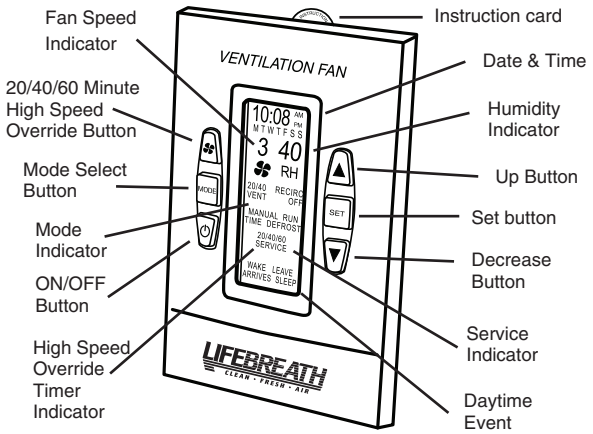
Programming Your Control

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press and release the MODE button until "PROGRAM SET" appears on the screen. Press SET.
3. Weekday letters (MTWTF) will flash. Press SET.
4. "WAKE" flashes. Press SET.
5. "AM" or "PM" flashes. SCROLL to desired time (in 20 minute intervals). Press SET.
6. The "FAN" symbol flashes. SCROLL to the desired fan speed (0-5). Press SET.
7. “VENT”, “20/40”or “OFF” will flash. SCROLL to the desired mode of operation. Press SET twice.
8. "LEAVE" flashes. Press SET. Repeat steps 4 to 6 to program four events per day.
9. “SS” (Saturday & Sunday) flashes. Press SET. Repeat steps 3 to 7 to program the weekend events.

Programming Individual Weekday Events

After performing the MTWTF and SS programming functions, you can program individual weekday events.

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press and release the MODE Button until "PROGRAM SET" appears on the screen. Press SET.
3. Weekday letters (MTWTF) will flash. Scroll to the desired weekday (M,T,W,T,F,S,S). Press SET.
4. “WAKE” flashes. Scroll to the desired event that you want to program as a custom setting (“WAKE”, “AWAY”, “RETURN” or “SLEEP”. Press SET.
5. Either “AM” or “PM” flashes. SCROLL to the desired time (available in 20 minute intervals). Press SET.
6. “FAN” flashes. SCROLL to desired fan speed (0 - 5). Press SET.
7. “VENT”, “20/40” or “OFF” will flash. SCROLL to the desired mode of operation. Press SET. (Refer to Manual for explanation of operational modes.)
8. More weekday events are programmable by pressing SET and repeating steps 4 to 7.



Connects to 3 wire 20 gauge low voltage wire

ATTENTION

Only one main control can be installed on your system.

Running the Program

Upon completion of the programming, you must activate the program.

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press MODE until the program indicates “PROGRAM” and “RUN”.

Manually Setting the Control

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press and release MODE until the program indicates "MANUAL" and "RUN". Press SET.
3. When the FAN symbol flashes, SCROLL (use the Up/Down arrows) to the desired fan speed (0-5). Press SET.
4. VENT, 20/40 or OFF will flash. SCROLL to the desired mode of operation. Press SET.

NOTE: The control remains in the “MANUAL RUN” position until you change back to “PROGRAM RUN” (Refer to “Running the Programmed Setting).

**Timers will not function when mode of operation is set to “OFF”.

Setting the Dehumidistat

Dehumidistat is disabled on 120ERV, 150ERV and 200ERV).

20/40/60 Minute High Speed Timer

This function temporarily initiates high speed ventilation for 20, 40 or 60 minutes.

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press the FAN button once for 20, twice for 40 and three times for 60 minutes and four times to cancel the timer.

Service Indicator

A ‘SERVICE’ indicator displays once every 4 months. Refer to "Maintenance Routine" in the Operation & Installation manual.

To reset the service indicator:

1. Refresh the screen: use the ON/OFF button to turn the control OFF and ON.
2. Press and release the Up and Down buttons simultaneously. The “SERVICE” icon will flash for 5 seconds.
3. Press SET within the 5 seconds and the service indicator will reset.

LIFEBREATH®
ENERGY RECOVERY VENTILATORS (ERVS)

Model 120ERV

ENGINEERING DATA

LATENT RECOVERY/MOISTURE TRANSFER CORE
The counter-flow energy recovery core transfers heat and water vapor between the two airstreams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has an independent motorized impeller with two speed operation.

FILTERS
Washable air filters in exhaust and supply air streams.

MOUNTING THE ERV
Adjustable height "L" bracket supplied.

DEFROST
Fan defrost system.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation.

WEIGHT 38 lbs. (17.2 kg) **SHIPPING WEIGHT** 41 lbs. (18.6 kg)

ELECTRONICS
Unit is supplied with a removable electrical box which can be accessed through the main door of the ERV.

OPTIONAL CONTROLS
The optional controls can be wall mounted in a central location of the home.

99-BC-01 Lifestyle RNC Ventilation Control
Can be wall mounted in a central location of the home (3 wire) 20 gauge 100 ft. length.
- 2 Speed Fan setting (Low/High)
- Adjustable Dehumidistat function built into main wall control.
- Built-in Relay for interlocking the unit to furnace.

99-DX01 Lifestyle RNC Digital Control
- 2 Speed Operation on each mode
- 2 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF
- Connect to 3 wire 20 gauge low voltage wire.

OPTIONAL TIMERS

99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40 or 60 minutes, (3 wire) 20 gauge wire (min.) 100 ft. length

99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100 ft. length.

99-101 **Mechanical Timer** - Initiates High speed ventilation for up to 60 minutes, (2 wire) 20 gauge wire (min.) 100 ft. length

OPTIONAL ACCESSORIES

99-190 **Dual Hood -** One 6" opening for supply and exhaust

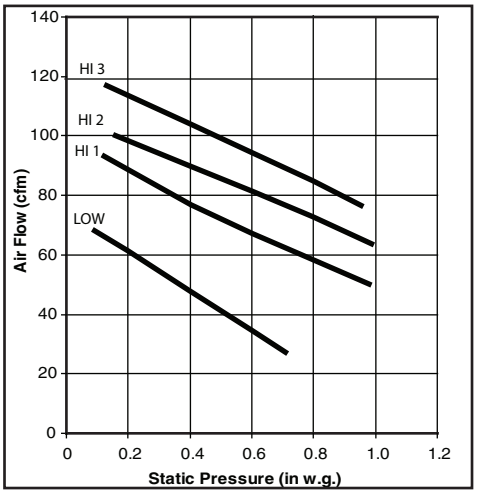
99-185 **Weatherhood Kit** - Two - 5" labelled Supply & Exhaust, c/w sleeve, collar, 1/4" (6 mm) mesh screen

Performance (HVI certified)

Net supply air flow in cfm (L/s) against external static pressure

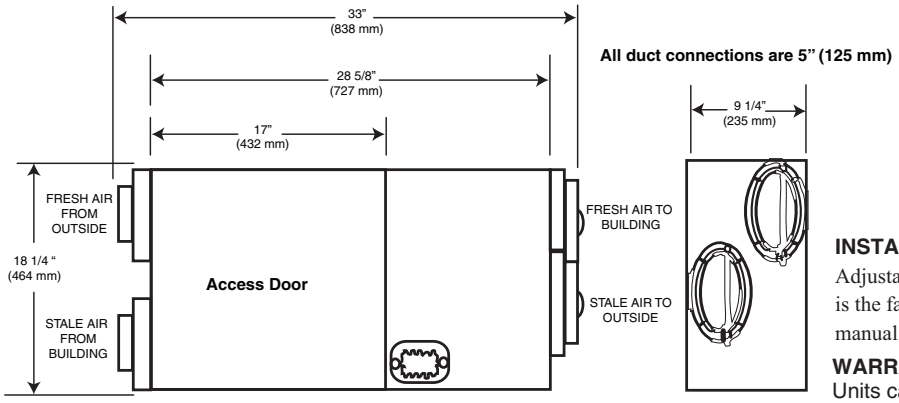
E.S.P (external static pressure)		*[cfm (L/s)]*
@ 0.1" (25 Pa)		119 (56)
@ 0.2" (50 Pa)		113 (53)
@ 0.3" (75 Pa)		108 (51)
@ 0.4" (100 Pa)		103 (49)
@ 0.5" (125 Pa)		98 (46)
@ 0.6" (150 Pa)		93 (44)
@ 0.7" (175 Pa)		88 (42)
@ 0.8" (200 Pa)		83 (39)
Sensible Effectiveness @ 64 cfm (30L/s)	32°F (0°C)	74
*Sensible Efficiency @ 64 cfm (30L/s)	32°F (0°C)	62
Total Efficiency @ 64 cfm (30L/s)	95°F (35°C)	35
VAC @ 60HZ		120
WATTS / Low speed.		69
WATTS / High speed		147
Amp rating		1.7

**Sensible Efficiency – thermal **Latent Efficiency – moisture*
Note: Effectiveness - based on temp. differential between the 2 airstreams
Efficiency – takes into account all power inputs



All units conform to CSA and UL standards.

DIMENSIONS 120ERV *inches (mm)*



BOTTOM VIEW **OUTLET END VIEW**

INSTALLER SELECTABLE HIGH SPEED SETTINGS
Adjustable DIP switches are located on the circuit board. Hi3 is the factory setting. Refer to the Operation and Installation manual for the adjustment instructions.

WARRANTY
Units carry a ten (10) year warranty on the enthalpic (ERV) core and a five (5) year replacement parts warranty.

Date: _____ Contractor: _____

Tag: _____ Qty: _____ Supplier: _____

Project: _____ Quote#: _____

Engineer: _____ Submitted by: _____

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ISO 9001 REGISTERED

LIFEBREATH®

ENERGY RECOVERY VENTILATORS (ERVS)

Model 150ERV

ENGINEERING DATA

LATENT RECOVERY/MOISTURE TRANSFER CORE

The counter-flow energy recovery core transfers heat and water vapor between the two airstreams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS

Each air stream has one centrifugal blower driven by a common PSC motor.

5 speed fan operation.

FILTERS

Washable air filters in exhaust and supply air streams.

MOUNTING THE ERV

Four threaded inserts at corners of the cabinet designed to accept the “S” hooks and hanging straps supplied with the unit.

CASE

Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Door balancing ports.

WEIGHT 75 lbs. (34Kg) **SHIPPING WEIGHT** 77lbs. (35Kg)

DEFROST—not available on this model

CONTROLS & ELECTRONICS

The **Lifestyle Digital Control** (included with unit) can be wall mounted in a central location of the home. (3 wire) 20 gauge wire (min.) 100' length

Electronic features include:

- 5 Speed Operation on each mode
- 2 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF
- Built-in Relay for Interfacing to furnace
- Service Reminder
- 20, 40, 60 Minute Override Timer
- Dehumidistat Disable Feature

OPTIONAL PROGRAMMABLE CONTROL

99-LS01 **Lifestyle Programmable Control** - contains all the features of the Lifestyle Digital Control with 7/24 programmable ventilation, (3 wire) 20 gauge wire (min.) 100' length

OPTIONAL TIMERS

99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes. (3 wire) 20 gauge wire (min.) 100' length

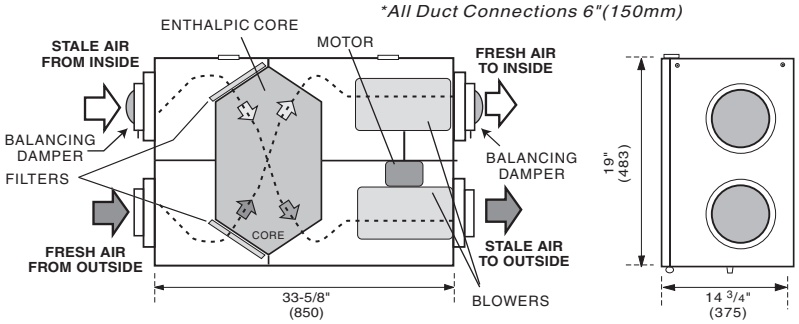
99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100’ length.

OPTIONAL ACCESSORIES

99-186 **Weatherhood Kit -** Two - 6” (150mm), labelled Supply & Exhaust, c/w sleeve, collar, 1/4 (6mm) mesh screen

DIMENSIONS 150ERV *inches (mm)*

*All Duct Connections 6"(150mm)



Performance (HVI Certified)

Net supply air flow in cfm (L/s) against external static pressure

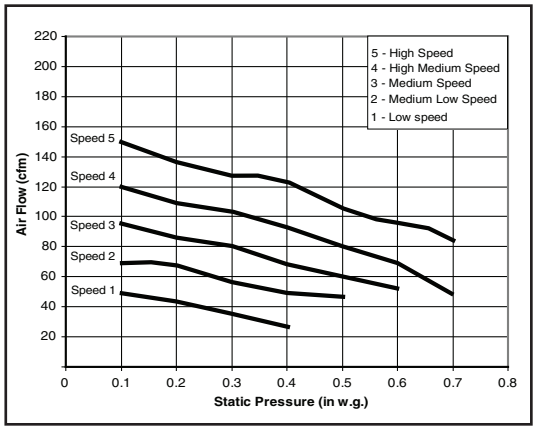
E.S.P (external static pressure)	*[cfm (L/s)]*
@ 0.1" (25 Pa)	151 (71)
@ 0.2" (50 Pa)	141 (67)
@ 0.3" (75 Pa)	132 (62)
@ 0.4" (100 Pa)	124 (59)
@ 0.5" (125 Pa)	107 (50)
@ 0.6" (150 Pa)	98 (46)
@ 0.7" (175 Pa)	81 (38)
@0.8 " (200 Pa)	60 (28)

Sensible Effectiveness @ 64 cfm (30 L/s)	32°F (0°C)	81%
*Sensible Efficiency @ 64 cfm (30 L/s)	32°F (0°C)	69%
Total Efficiency @ 64 cfm (30L/s)	95°F (35°C)	47%
VAC @ 60HZ		120
WATTS / Low speed		70
WATTS / High speed		108
Amp rating		1.4

**Sensible Efficiency – thermal*

Note: Effectiveness - based on temp. differential between the 2 airstreams

Efficiency – takes into account all power inputs



All units conform to CSA and UL standards.

***NOTE:** Front clearance of 25 inches (635 mm) is recommended for servicing unit.*

WARRANTY

Units carry a tem (10) year warranty on the enthalpic (ERV) core and a five (5) year replacement parts warranty.

Date: _____ Contractor: _____

Tag: _____ Qty: _____ Supplier: _____

Project: _____ Quote#: _____

Engineer: _____ Submitted by: _____

AIRIA BRANDS INC.

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ISO 9001 REGISTERED

LIFEBREATH®

ENERGY RECOVERY VENTILATORS (ERVS)

Model 200ERV

ENGINEERING DATA

LATENT RECOVERY/MOISTURE TRANSFER CORE
The counter-flow energy recovery core transfers heat and water vapor between the two airstreams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has one centrifugal blower driven by a common PSC motor.
5 speed fan operation.

FILTERS
Washable air filters in exhaust and supply air streams.

MOUNTING THE ERV
Four threaded inserts at corners of the cabinet designed to accept the “S” hooks and hanging straps supplied with the unit.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Door balancing ports.
WEIGHT 75 lbs. (34Kg) **SHIPPING WEIGHT** 77lbs. (35Kg)
DEFROST—not available on this model

CONTROLS & ELECTRONICS
The **Lifestyle Digital Control** (included with unit) can be wall mounted in a central location of the home. (3 wire) 20 gauge wire (min.) 100' length
Electronic features include:
- 5 Speed Operation on each mode
- 2 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF
- Built-in Relay for Interfacing to furnace
- Service Reminder
- 20, 40, 60 minute Override Timer
- Dehumidistat Disable Feature

OPTIONAL PROGRAMMABLE CONTROL
99-LS01 **Lifestyle Programmable Control** - contains all the features of the Lifestyle Digital Control with 7/24 programmable ventilation, (3 wire) 20 gauge wire (min.) 100' length

OPTIONAL TIMERS
99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes. (3 wire) 20 gauge wire (min.) 100' length
99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100’ length.

OPTIONAL ACCESSORIES
99-186 **Weatherhood Kit**, Two — 6” (150 mm), labelled Supply & Exhaust, c/w sleeve, collar, 1/4” (6 mm) mesh screen

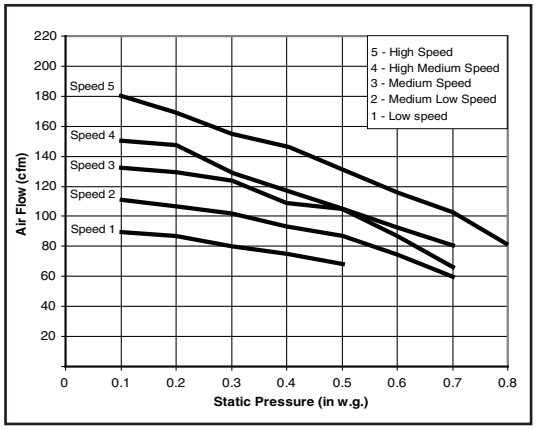
Performance (HVI Certified)

Net supply air flow in cfm (L/s) against external static pressure

E.S.P (external static pressure)	***[cfm (L/s)]***
@ 0.1" (25 Pa)	180 (85)
@ 0.2" (50 Pa)	169 (80)
@ 0.3" (75 Pa)	157 (74)
@ 0.4" (100 Pa)	146 (69)
@ 0.5" (125 Pa)	132 (62)
@ 0.6" (150 Pa)	118 (56)
@ 0.7" (175 Pa)	101 (48)

Sensible Effectiveness @ 116 cfm (55 L/s)	32°F (0°C)	76%
*Sensible Efficiency @ 116 cfm (55 L/s)	32°F (0°C)	69%
Total Efficiency		50%
VAC @ 60HZ		120
WATTS / Low speed		68
WATTS / High speed		97
Amp rating		1.4

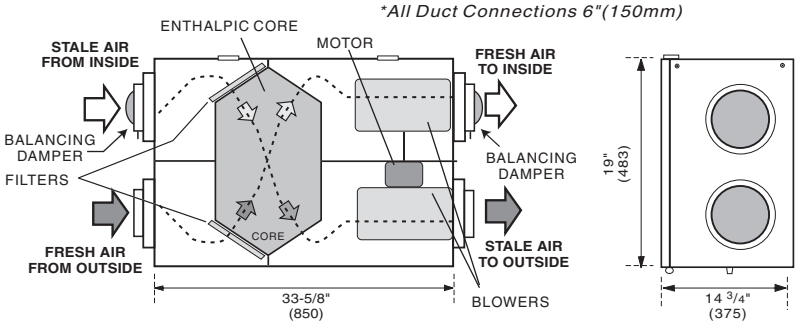
**Sensible Efficiency – thermal*
Note: Effectiveness - based on temp. differential between the 2 airstreams
Efficiency – takes into account all power inputs



All units conform to CSA and UL standards.

DIMENSIONS 200ERV *inches (mm)*

**All Duct Connections 6"(150mm)*



***NOTE:** Front clearance of 25 inches (635 mm) is recommended for servicing unit.*

WARRANTY
Units carry a tem (10) year warranty on the enthalpic (ERV) core and a five (5) year replacement parts warranty.

Date: _____ Contractor: _____

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ISO 9001 REGISTERED

The Three Methods of Installation

The three methods of installation for the ERV system are:

- The Simplified installation.
- The Partially Dedicated Installation
- The Fully Dedicated Installation

Simplified Installations

The Simplified Installation draws stale air from the cold air return duct of the air handler/furnace and introduces an equal amount of fresh air farther downstream into the cold air return. Refer to *"Simplified Installation Diagrams".*

The air handler/furnace blower must be running when the unit is operating for this system to be effective. Refer to *"Interlocking the ERV to an Air handler/Furnace Blower".*

Partially Dedicated Installations

The Partially Dedicated Installation draws stale air from specific points in the house and introduces an equal amount of fresh air into the cold air return. Refer to *"Partially Dedicated Installation Diagrams".*

Stale air ducts should be installed in areas of the home where the poorest indoor air quality exists (bathrooms and kitchen). Each location with a stale air duct should have a timer to initiate high speed ventilation. Refer to "*Optional Timers*" in this manual.

The air handler/furnace blower should be running when the ERV is operating to evenly distribute the fresh air throughout the house. Refer to *"Interlocking the ERV to an Air handler/Furnace Blower"*.

Fully Dedicated Installations

The Fully Dedicated Installation draws stale air from specific points in the house and delivers fresh air to specific locations of the house. This system is not connected to an air handler/furnace. Refer to "*The Fully Dedicated Installation Diagrams*" in this manual.

Stale air ducts should be installed in areas of the home where the poorest indoor air quality exists (bathrooms and kitchen). Each location with a stale air duct should have a timer which will initiate high speed ventilation. Refer to *"Optional Timers"* in this manual.

Fresh air ducts should be installed to all bedrooms and living areas, excluding bathrooms, kitchen and utility areas. Grilles should be located high on a wall or in ceiling locations. Grilles that diffuse the air comfortably are recommended. Refer to *"Grilles"* in this manual.

Installing the Ducting Between the ERV and Living Areas in the House

A well designed and installed ducting system will allow the ERV to operate at its maximum efficiency.

All ducts should be kept short and have as few bends or elbows as possible to maximize airflow. Forty-five degree elbows are preferred to 90° elbows. Use "Y" tees instead of straight tees whenever possible.

All duct joints must be fastened with screws, rivets or duct sealant and wrapped with mastic or quality duct tape to prevent leakage. Mastic is preferred but if duct tape is used, we recommend aluminum foil duct tape.

Galvanized (rigid) ducting from the ERV to the living areas in the house is recommended whenever possible although flexible duct can be used in moderation if necessary.

A short length (approximately 12 inches or 300mm) of non-metallic flexible insulated duct should be connected between the ERV and the supply/exhaust duct system to avoid possible noise transfer through the duct system.

All ducts running through attics and unheated spaces must be sealed and insulated to code.

WARNING

Include a short length of fabric flex duct or other non-metallic connector in this hard ducted line in order to keep the ERV separately grounded (electrically) from the air handler.

ATTENTION

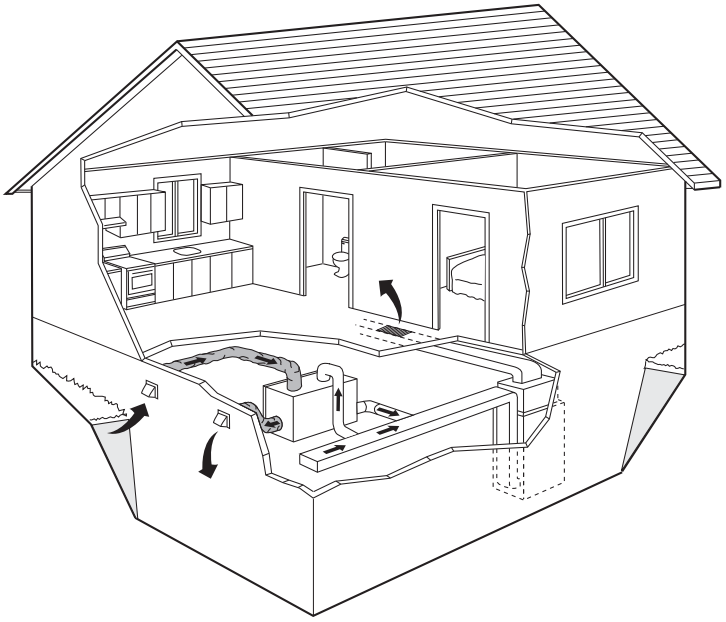
Applications such as greenhouses, atriums, swimming pools, saunas, etc. have unique ventilation requirements which should be addressed with an isolated ventilation system.

Simplified Installation Diagrams (150ERV and 200ERV)

Simplified Installation (Return/Return Method)

Key Points

- The ERV must be balanced.
- It is mandatory that the furnace blower run continuously or ERV operation be interlocked with the furnace blower.
- The duct configuration may change depending on the ERV model. See specifications for your unit.
- Check local codes / authority having jurisdiction for acceptance.
- A backdraft damper is required in the exhaust air duct to prevent outdoor air from entering the unit when the Furnace/Airhandler is running and the unit is in either Standby or OFF.

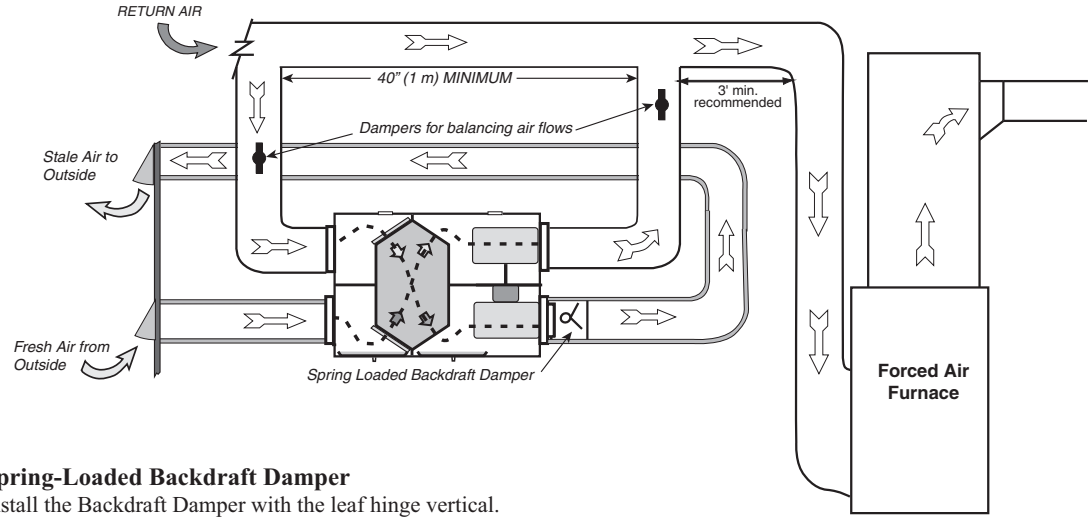


Sizing the Ductwork

It is the responsibility of the installer to ensure all ductwork is sized and installed as designed to ensure the system will perform as intended.

The amount of air (cfm) that an ERV will deliver is directly related to the total external static pressure (E.S.P.) of the system. Static pressure is a measure of resistance imposed on the blower by length of duct work plus the number of fittings used in the duct work.

DIRECT CONNECTION of both the ERV SUPPLY AIR STREAM and EXHAUST AIR STREAM to the FURNACE COLD AIR RETURN



Spring-Loaded Backdraft Damper

Install the Backdraft Damper with the leaf hinge vertical.
The damper is installed on the "Stale Air to Outside Collar".

6" (152mm) Backdraft Damper Part No. 99-RSK6

Installation Notes

- Unit is normally balanced on HIGH speed with the furnace blower ON.
- A minimum separation of 40 inches (1m) is recommended between the two direct connections.
- The exhaust air connection should be upstream of the supply air connection to prevent exhausting any fresh air.
- Weatherhood arrangement is for drawing purposes only. Six feet (2m) minimum separation is recommended. The Weatherhood must also be 18" (460mm) above grade minimum.
- The airflow must be confirmed on site using the balancing procedures found in this manual.

⚠ WARNING

The Stale Air to Outside air duct requires a Backdraft Damper. This damper prevents outdoor air from entering the ERV during the operation of the Furnace/ Airhandler while the ERV is in either standby or OFF.

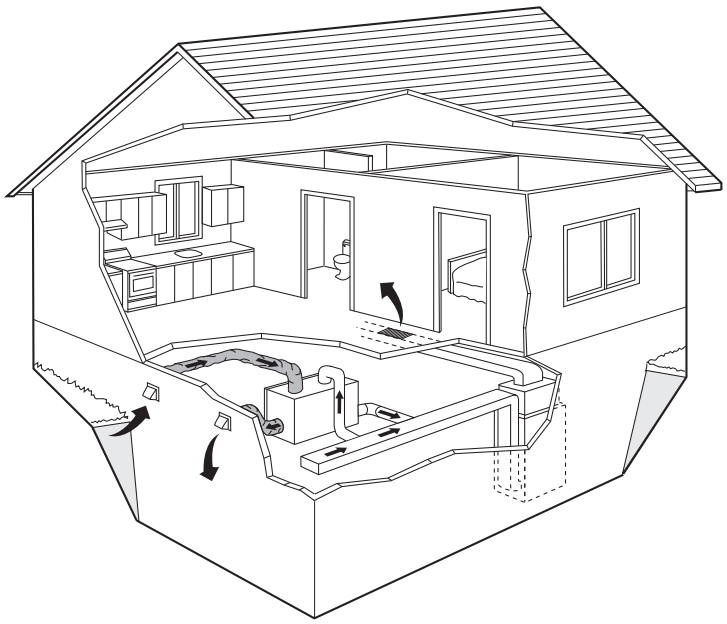
Partially Dedicated Installation Diagrams (150ERV and 200ERV)

Partially Dedicated System

This installation enables stale air to be drawn from the poorest air quality areas of the home (bathrooms, kitchen).

Key Points

- The ERV must be balanced.
- It is recommended that the furnace blower run continuously or ERV operation be interlocked with the furnace blower to evenly distribute the fresh air throughout the house.
- The duct configuration may change depending on the ERV model. See specifications for your unit.
- Check local codes / authority having jurisdiction for acceptance.
- A backdraft damper is required in the exhaust air duct to prevent outdoor air from entering the unit when the Furnace/Airhandler is running and the unit is in either Standby or OFF.

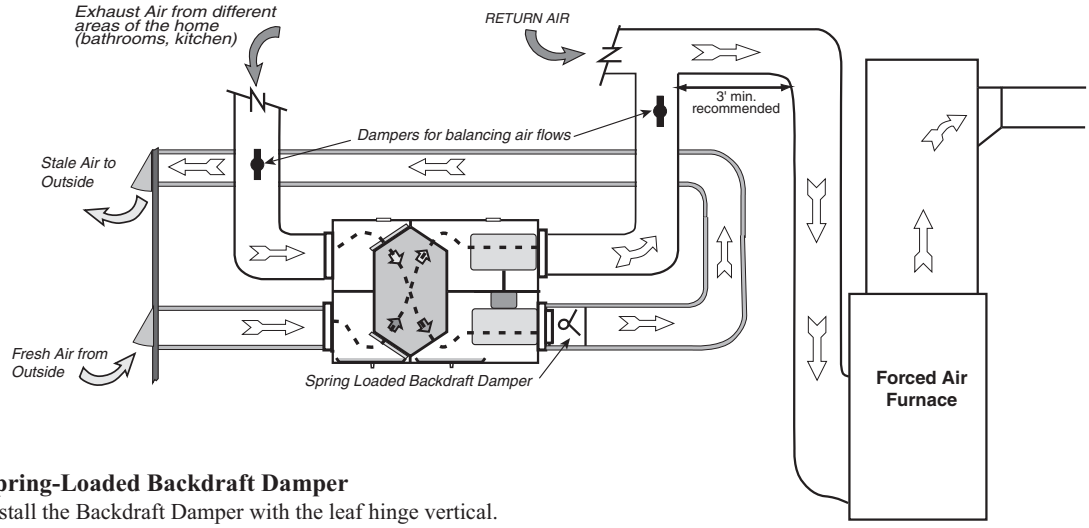


Sizing the Ductwork

It is the responsibility of the installer to ensure all ductwork is sized and installed as designed to ensure the system will perform as intended.

The amount of air (cfm) that an ERV will deliver is directly related to the total external static pressure (E.S.P.) of the system. Static pressure is a measure of resistance imposed on the blower by length of duct work plus the number of fittings used in the duct work.

DIRECT CONNECTION of the SUPPLY AIR STREAM to the FURNACE COLD AIR RETURN
(Stale air drawn from key areas of the home)


Exhaust Air from different areas of the home (bathrooms, kitchen)
RETURN AIR
3' min. recommended
Dampers for balancing air flows
Stale Air to Outside
Fresh Air from Outside
Spring Loaded Backdraft Damper
Forced Air Furnace

Spring-Loaded Backdraft Damper

Install the Backdraft Damper with the leaf hinge vertical.
The damper is installed on the "Stale Air to Outside Collar".

6" (152mm) Backdraft Damper Part No. 99-RSK6

Installation Notes

- Unit is normally balanced on HIGH speed with the furnace blower ON.
- A minimum separation of 40 inches (1m) is recommended between the two direct connections.
- The exhaust air connection should be upstream of the supply air connection to prevent exhausting any fresh air.
- Weatherhood arrangement is for drawing purposes only. Six feet (2m) minimum separation is recommended. The Weatherhood must also be 18" (460mm) above grade minimum.
- The airflow must be confirmed on site using the balancing procedures found in this manual.

⚠ WARNING

The Stale Air to Outside air duct requires a Backdraft Damper. This damper prevents outdoor air from entering the ERV during the operation of the Furnace/Airhandler while the ERV is in either standby or OFF.

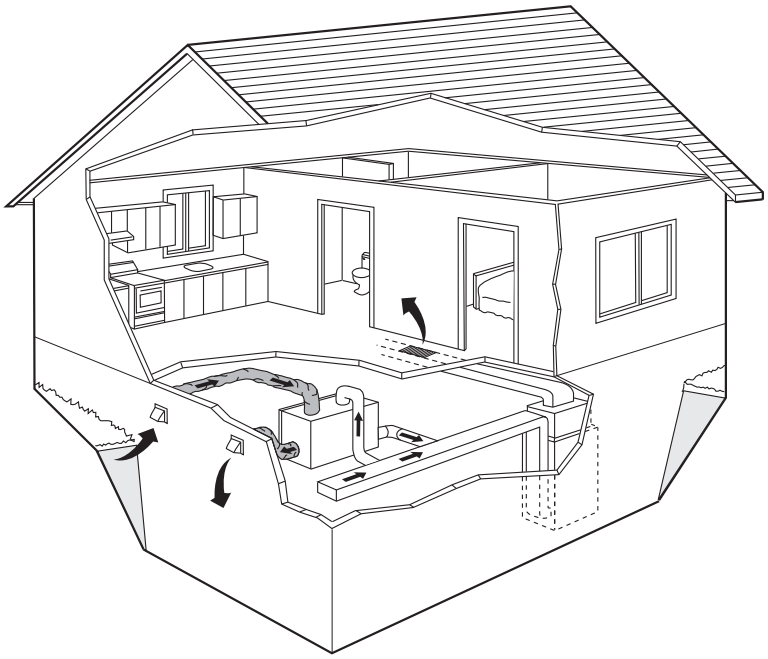
Fully Dedicated Installation Diagrams (150ERV and 200ERV)

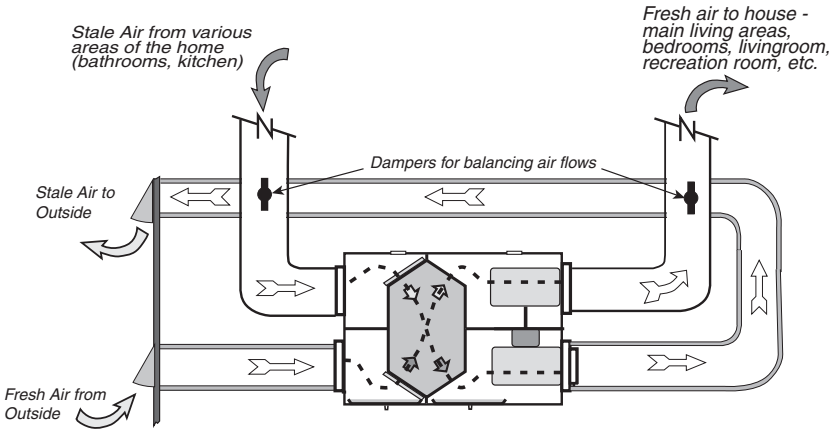
Fully Dedicated System

This is a stand alone ERV system which is not connected to a force air system. Stale air is drawn from key areas of the home (bathroom, kitchen) while fresh air is supplied to main living areas

Key Points

- The ERV must be balanced.
- The duct configuration may change depending on the ERV model. See specifications for your unit.
- Check local codes / authority having jurisdiction for acceptance.




Stale Air from various areas of the home (bathrooms, kitchen)
Fresh air to house - main living areas, bedrooms, livingroom, recreation room, etc.
Dampers for balancing air flows
Stale Air to Outside
Fresh Air from Outside

Installation Notes

- Weatherhood arrangement is for drawing purposes only. Six feet (2m) minimum separation is recommended. The Weatherhood must also be 18" (460 mm) above grade minimum.
- The airflow must be confirmed on site using the balancing procedures found in this manual.

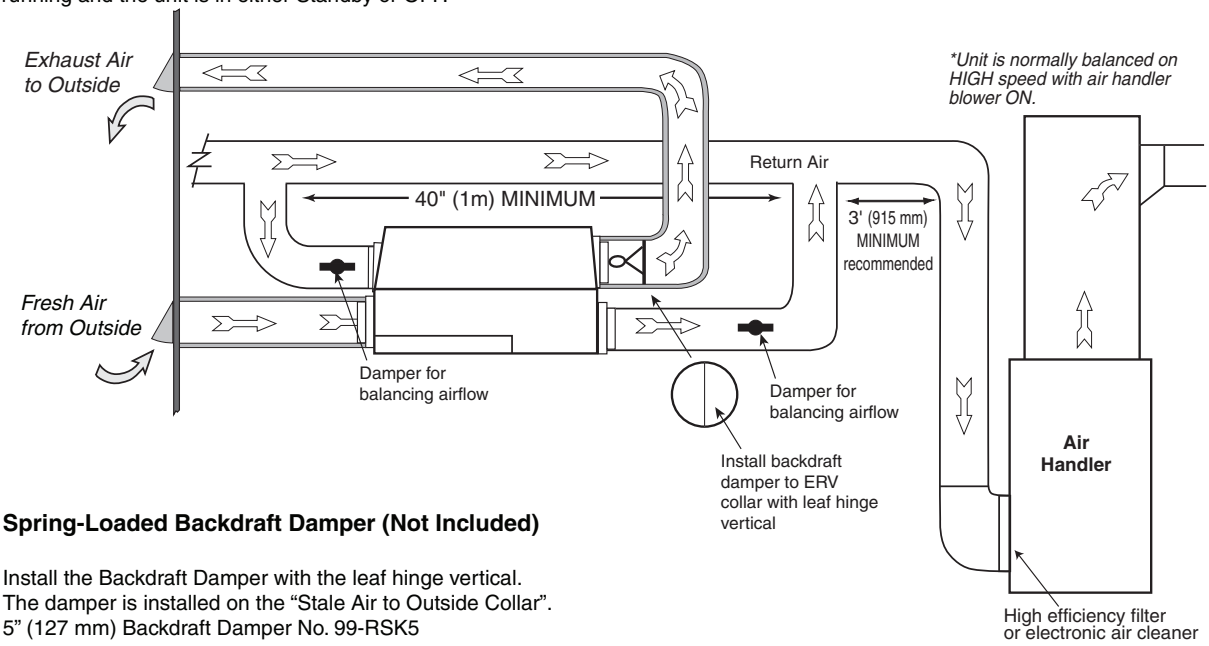
Simplified Installation Diagrams (120ERV)

Key Points

- The ERV must be balanced.
- It is mandatory that the furnace blower run continuosly or ERV operation be interlocked with the furnace blower.
- The duct configuration may change depending on the ERV model. See specifications for your unit.
- Check local codes / authority having jurisdiction for acceptance.
- A backdraft damper is required in the exhaust air duct to prevent outdoor air from entering the unit when the Furnace/Airhandler is running and the unit is in either Standby or OFF.

Sizing the Ductwork

The installer must ensure that all duct work is sized and installed as designed to ensure the system will perform as intended.
The amount of air (cfm) that an ERV will deliver is directly related to the total external static pressure (E.S.P.) of the system. Static pressure is a measure of resistance imposed on the blower by length of duct work plus the number of fittings used in the duct work.


*Unit is normally balanced on HIGH speed with air handler blower ON.
Exhaust Air to Outside
Fresh Air from Outside
40" (1m) MINIMUM
Return Air
3' (915 mm) MINIMUM recommended
Damper for balancing airflow
Damper for balancing airflow
Install backdraft damper to ERV collar with leaf hinge vertical
Air Handler
High efficiency filter or electronic air cleaner

Spring-Loaded Backdraft Damper (Not Included)

Install the Backdraft Damper with the leaf hinge vertical.
The damper is installed on the “Stale Air to Outside Collar”.
5” (127 mm) Backdraft Damper No. 99-RSK5

Installation Notes

- Unit is normally balanced on HIGH speed with the furnace blower ON.
- A minimum separation of 40 inches (1m) is recommended between the two direct connections.
- The exhaust air connection should be upstream of the supply air connection to prevent exhausting fresh air.
- Weatherhood arrangement is for drawing purposes only. Six feet (2m) minimum separation is recommended. The Weatherhood must also be a minimum of 18” (460 mm) above grade.
- The airflow must be confirmed on site using the balancing procedures explained in this manual.

WARNING

A Backdraft Damper is required in the Stale Air to Outside air duct to prevent outdoor air from entering the ERV when the Furnace/Airhandler is operating and the ERV is in either Standby or OFF.

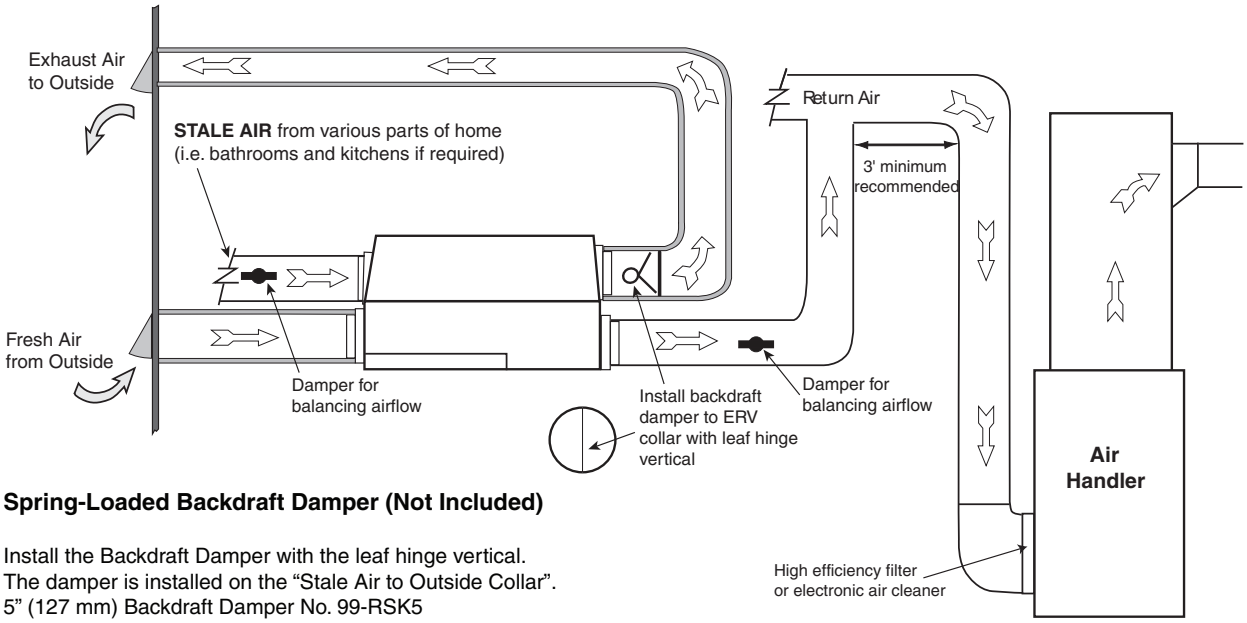
Partially Dedicated Installation Diagrams (120ERV)

Key Points

- The ERV must be balanced.
- It is mandatory that the furnace blower run continuosly or ERV operation be interlocked with the furnace blower.
- The duct configuration may change depending on the ERV model. See specifications for your unit.
- Check local codes / authority having jurisdiction for acceptance.
- A backdraft damper is required in the exhaust air duct to prevent outdoor air from entering the unit when the Furnace/Airhandler is running and the unit is in either Standby or OFF.

Sizing the Ductwork

The installer must ensure that all duct work is sized and installed as designed to ensure the system will perform as intended.
The amount of air (cfm) that an ERV will deliver is directly related to the total external static pressure (E.S.P.) of the system. Static pressure is a measure of resistance imposed on the blower by length of duct work plus the number of fittings used in the duct work.



Spring-Loaded Backdraft Damper (Not Included)

Install the Backdraft Damper with the leaf hinge vertical.
The damper is installed on the “Stale Air to Outside Collar”.
5” (127 mm) Backdraft Damper No. 99-RSK5

Installation Notes

- Unit is normally balanced on HIGH speed with the furnace blower ON.
- A minimum separation of 40 inches (1m) is recommended between the two direct connections.
- The exhaust air connection should be upstream of the supply air connection to prevent exhausting fresh air.
- Weatherhood arrangement is for drawing purposes only. Six feet (2m) minimum separation is recommended. The Weatherhood must also be a minimum of 18” (460 mm) above grade.
- The airflow must be confirmed on site using the balancing procedures explained in this manual.

WARNING

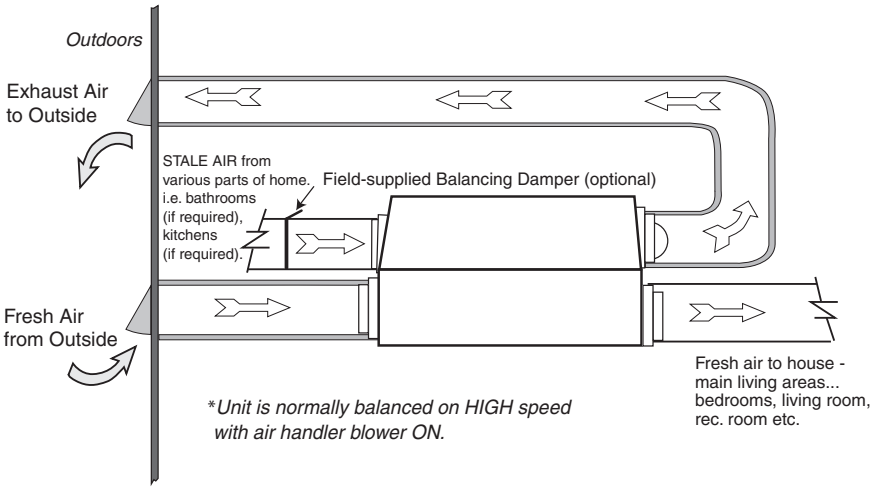
A Backdraft Damper is required in the Stale Air to Outside air duct to prevent outdoor air from entering the ERV when the Furnace/Airhandler is operating and the ERV is in either Standby or OFF.

Fully Dedicated System for ERV

- Stale air drawn from key areas of home (bathroom, kitchen, laundry)
- Fresh air supplied to main living areas of home

WARNING

ERV must be balanced.


Outdoors
Exhaust Air to Outside
STALE AIR from various parts of home. i.e. bathrooms (if required), kitchens (if required).
Field-supplied Balancing Damper (optional)
Fresh Air from Outside
Fresh air to house - main living areas... bedrooms, living room, rec. room etc.
*Unit is normally balanced on HIGH speed with air handler blower ON.

⚠ CAUTION

Weather hood arrangement - a minimum of 6' (2m) of separation is recommended and a minimum of 18" (460mm) clearance above grade.

WARNING

Before installation, careful consideration must be given to how this system will operate if connected to any other piece of mechanical equipment, i.e. a forced air furnace or air handler, operating at a higher static. After installation, the compatibility of the two pieces of equipment must be confirmed, by measuring the air flows of the ERV, by using the balancing procedure found in this manual.

It is important to assess how the operation of an ERV will interact with vented combustion equipment (i.e. Gas Furnaces, Oil Furnaces, Wood Stoves etc.).

NEVER install a ventilator in a situation where its normal operation, lack of operation or partial failure may result in the backdrafting or improper functioning of vented combustion equipment.

Connecting Appliances to the ERV

The following appliances should not be connected to the ERV:

- clothes dryer
- range top
- stove top exhaust fan
- central vacuum system

NOTE: Connecting any of these items to the ERV will invalidate your warranty.

Location Selection

Install the ERV in a space conveniently located for servicing the unit. A typical location for the ERV is in a Mechanical room or in an area close to the outside wall where the weatherhoods are mounted. If a convenient area in the basement does not exist, a utility or laundry room is acceptable.

Install the unit in a horizontal position suspended with the hanging straps provided. Leave sufficient clearance below the access door for servicing the air filters and core.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer or service agency.

WARNING

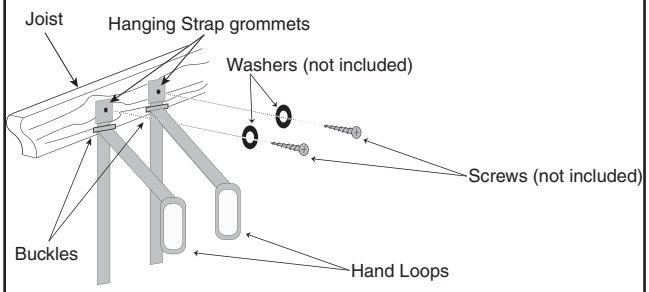
Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power unit OFF at disconnect switch(es). Unit may have multiple power supplies.

Suspend the Unit with the Adjustable Hanging Straps (150ERV and 200ERV)

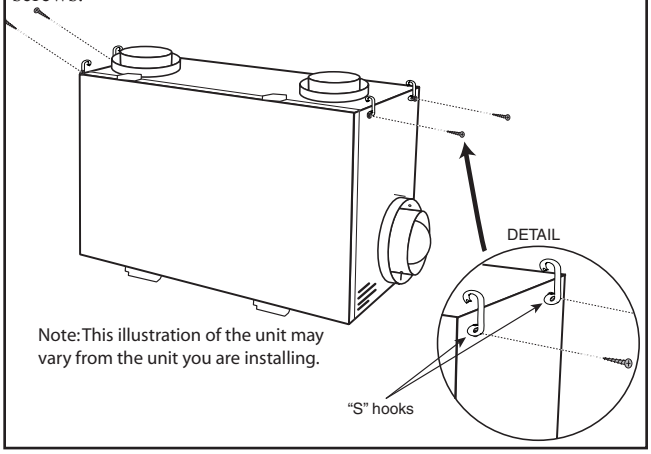
Use 4 screws and 4 washers (not incldued) to attach the hanging straps to the floor joists. The washer must be wider than the eyelet of the grommet on the hanging strap.

By design, the adjustable hanging straps reduce the possibility of noise, resonance and harmonics.

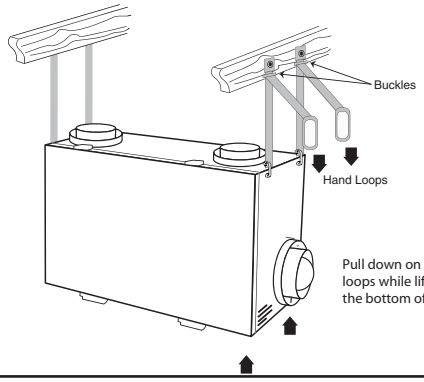
STEP 1. Insert the screws and washers (not included) through the Hanging Strap grommets and fasten to the joists.



STEP 2. Unscrew the 4 machine screws located on the upper side of the unit. Attach the "S" hooks and reinsert the machine screws.

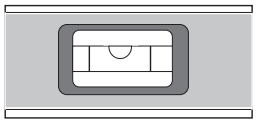


STEP 3. Hook the bottom grommets of the straps through the "S" hooks. Pull down vertically on the hand loops while lifting up the bottom of the cabinet. Repeat at opposite end of the unit.

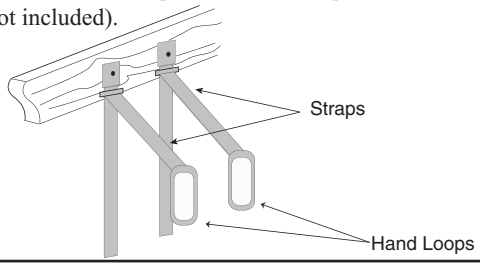


Note: Do not pull the Hand Loops in a horizontal or lateral direction during the installation/adjustment process.

STEP 4. Level the unit from left to right and front to back.
- Adjust the unit down by lifting up on the buckle.
- Adjust the unit up by pulling down vertically on the Hand Loops while lifting up the bottom of the cabinet.



STEP 5. Fold the hand loops and excess strap and secure with a nylon tie (not included).



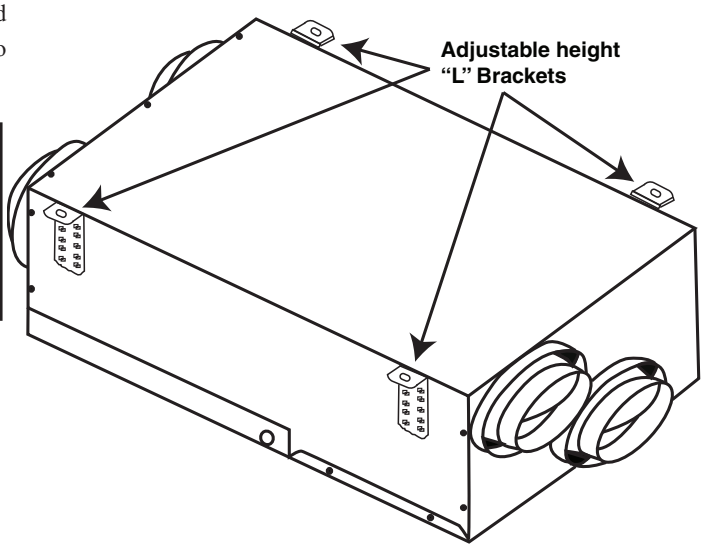
Suspending the RNC120F

Suspending the RNC120F

It is important to isolate the "L" BRACKET from the attached surface to minimize vibration. Use the hardware provided to attach the brackets. Do not drill additional holes in the HRV.

ATTENTION

The unit must be mounted level for proper drainage of the condensate pans.



Weatherhood Installation (ERV)

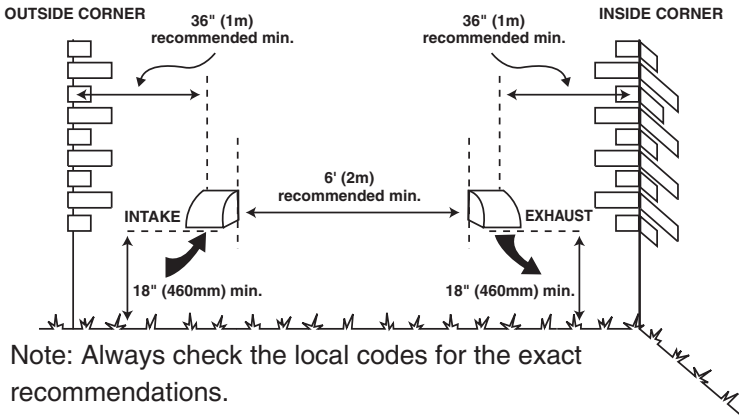
Lifebreath Weatherhoods

Fixed, covered weatherhoods include a 1/4” (6mm) screen to prevent foreign objects from entering the duct work. Hoods are labelled Supply and Exhaust. The kit also includes 2 sleeve of pipe and 2 collars.

Available Parts

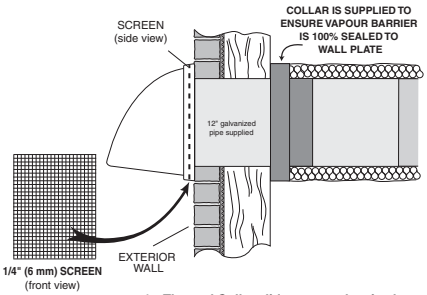
5” (125 mm) Part No. 99-185
6” (150 mm) Part No. 99-186
7” (200 mm) Part No. 99-187

Weatherhood Clearances



Note: Always check the local codes for the exact recommendations.

WEATHERHOOD INSTALLATION


SCREEN (side view)
COLLAR IS SUPPLIED TO ENSURE VAPOUR BARRIER IS 100% SEALED TO WALL PLATE
12" galvanized pipe supplied
1/4" (6 mm) SCREEN (front view)
EXTERIOR WALL

1. Thermal Collar slides over galvanized sleeve of Weatherhood.
2. Fasten Thermal Collar to Belt.
3. Slide the Insulated Flexible Ducting over th e Weatherhood's galvanized sleeve and fa sten it to the Thermal Collar.
4. Hood is hinged to allow for easy access for cleaning of bird screen.

Dual Hood Part # 99-190

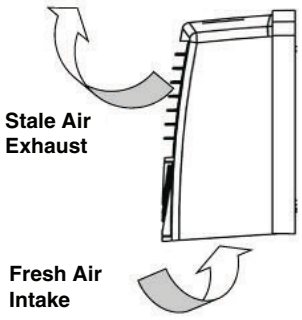
The Dual Hood offers the benefit of requiring only one 6” hole in the exterior wall to complete the connections for fresh air intake and stale air exhaust. The pressure drop/airflow charts should be referred to when matching the Dual Hood to the HRV / ERV.

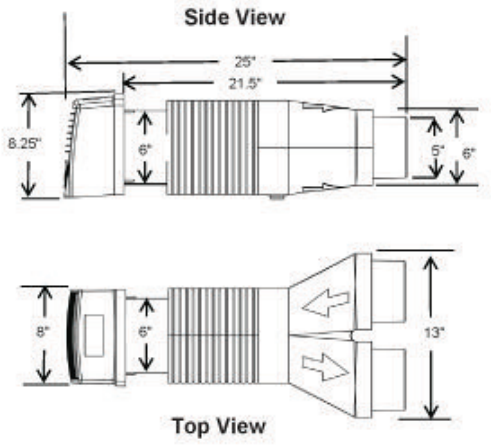
Component Rating

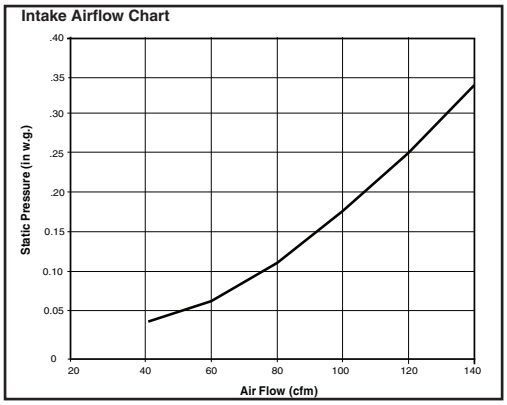
All plastic components are rated UL 94V-0. Foam components are rated 5/50 Flame spread/smoke development.

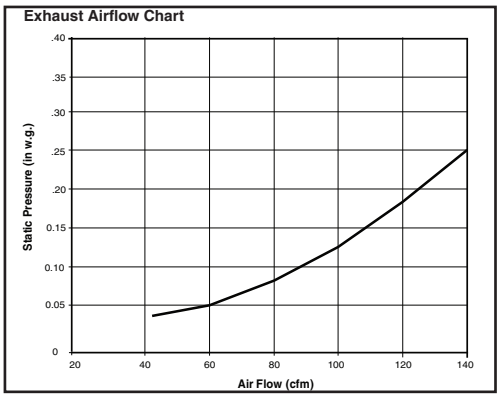
Note: Contact the local building authority before installing the Dual Hood to verify compliance with the local building codes.

Side View of the Hood and Backplate









Adjustable grilles should be used to balance the flow rates into and out of various rooms. The grilles should not be adjusted after balancing the unit.

Grilles or diffusers should be positioned high on the wall or in the ceiling. Kitchen Exhaust grilles must never be connected to the range hood. They should be installed at least 4 feet (1.2 m) horizontally away from the stove.

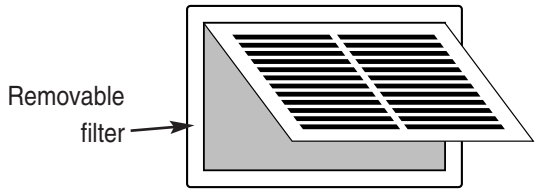
CAUTION ⚠

Do not mount exhaust grille within 4' (1.2m) (horizontally) of a stove to prevent grease from entering the unit.

The Lifebreath Kitchen Grille

(Part # 10-002)

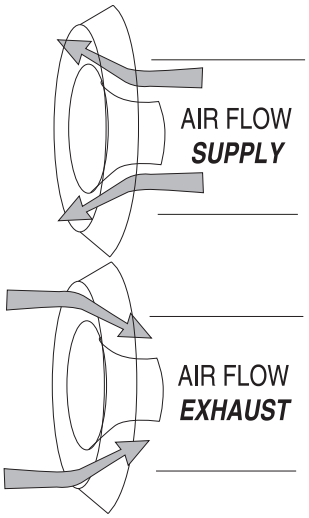
The Lifebreath Kitchen Grille includes a removable grease filter. Most building codes require that kitchen grilles be equipped with washable filters.



The Lifebreath Techgrille

The TECHGRILLE is a round, fully adjustable grille, which provides superior, quiet air distribution.

4" (100 mm) Part No. 99-EAG4
5" (125 mm) Part No. 99-EAG5
6" (150 mm) Part No. 99-EAG6
8" (200 mm) Part No. 99-EAG8

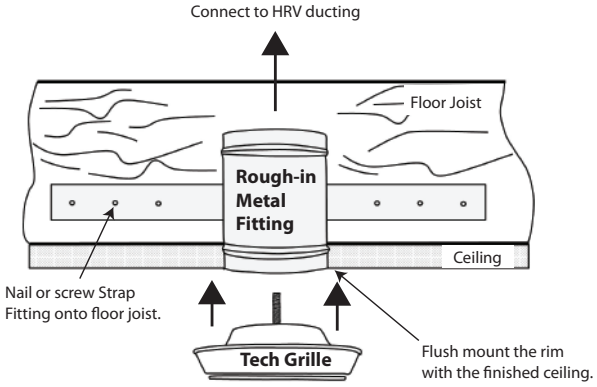


Grille Fittings

Rough-in Metal Fitting (Part # 99-RIMF 4/5/6/8/)

Use this rough-in fitting before the drywall is installed.

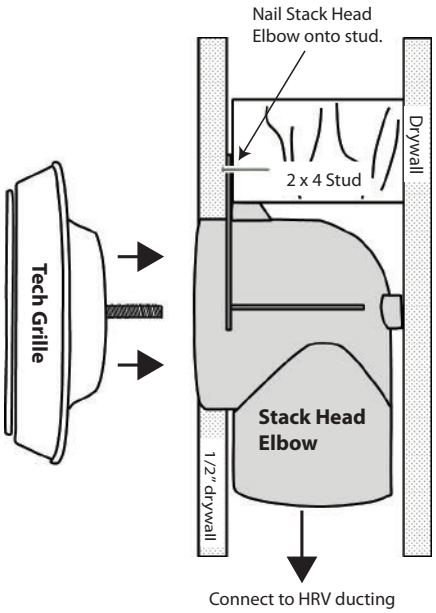
- Nail or screw the fitting onto the floor joist.
- Available sizes are 4”, 5”, 6”, and 8” sizes.


Connect to HRV ducting
Floor Joist
Rough-in Metal Fitting
Ceiling
Nail or screw Strap Fitting onto floor joist.
Tech Grille
Flush mount the rim with the finished ceiling.

Stack Head Elbow (Part # 99-WF4/ 99-WF6)

Use this rough-in fitting before the drywall is installed. This fitting is ideal for running ducting through 2” x 4” (min.) studded walls.

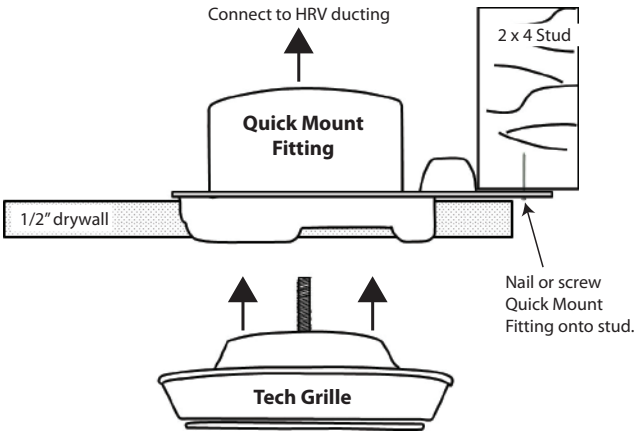
- Nail fitting to stud.
- Available sizes are 4” and 6” sizes.



Quick Mount Fitting (Part #99-QM 4/5/6)

Use this rough-in fitting before the drywall is installed.

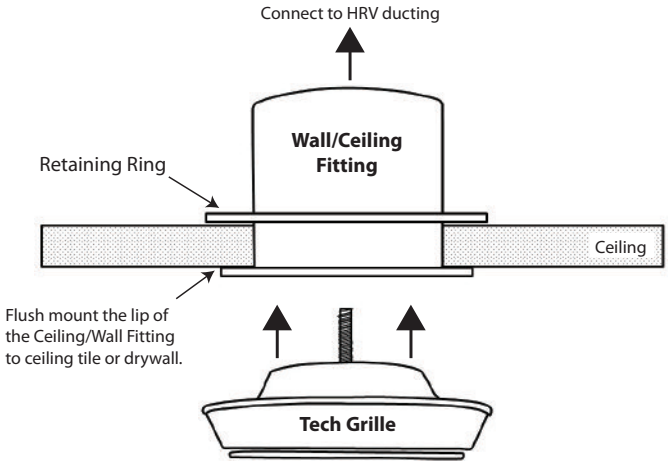
- Nail fitting onto the stud.
- Available sizes are 4”, 5” and 6” sizes.



Ceiling/Wall Fitting (Part # 99-CF 4/5/6/8)

Use this fitting for ceiling tiles or finished/installed drywall.

- Cut a hole through the ceiling tile, insert the fitting and use the retaining ring to hold the fitting in place.
- For finished/installed drywall, use caulking around the lip if you do not have access to attach the retaining ring.
- Available sizes are 4”, 5”, 6” and 8”.


Connect to HRV ducting
Wall/Ceiling Fitting
Retaining Ring
Ceiling
Flush mount the lip of the Ceiling/Wall Fitting to ceiling tile or drywall.
Tech Grille

Installation of the Main Control

The **Lifestyle Controls** may be installed onto a flush mounted 2" x 4" electrical switch box or it may be surface mounted onto a wall.

Only 1 master control should be installed to a ventilation system (the Face Plate on this illustration may not be exactly the same as yours).

1. Remove the *Operating Instructions Card* from the top of the Control (Figure A).
2. Separate the *Face Plate* from the *Back Plate* by firmly pulling apart (Figure B). Be careful not to damage Face Plate Contact Pins.
3. Place the *Back Plate* of the control in the desired location on the wall and pencil mark the wall in the center of the *Wire Opening, Top Screw Hole* and *Bottom Screw Hole* (Figure C).
4. Remove the *Back Plate* and drill a 3/8" opening in the wall to allow for the *Wire Opening* and a 1/8" hole for the *Wall Anchors* for the top and bottom screw holes (Figure D).
5. Pull 3/20 wire through the opening in the wall and the *Wire Opening* of the *Back Plate* (Figure C).
6. Connect Red, Green and Yellow to the *Wiring Terminals* located on the *Back Plate* (Figure C).
7. Secure a single wire to the *Wire Retainer* located on the *Back Plate* (Figure C).
8. Attach the *Back Plate* to the wall using the 2 supplied screws and anchors.
9. Attach the *Face Plate* to the *Back Plate* (Figure B). Note: Be careful to correctly align the *Face Plate* to avoid damaging the *Face Plate Contact Pins*.
10. Insert the *Operating Instructions Card* into the control (Figure A).
11. Connect the 3/20 wire to the *Terminal Block* located on ventilator (Figure E).

ATTENTION

Pay special attention not to damage the Contact Pins when attaching and detaching the Face Plate. (Figure B)

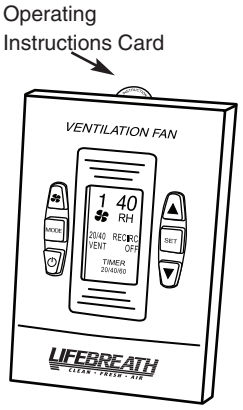


Figure A - Face Plate
(Illustration of Face Plate may vary from actual control)

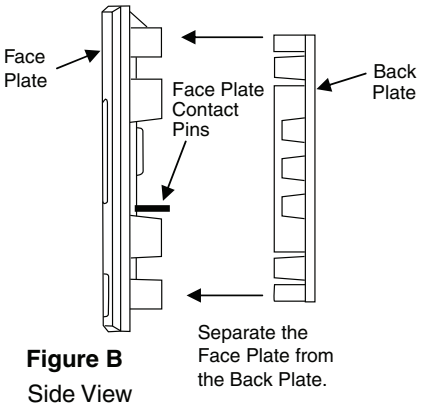


Figure B
Side View

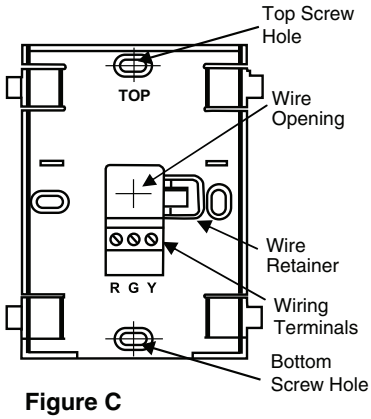


Figure C
Front View of Back Plate

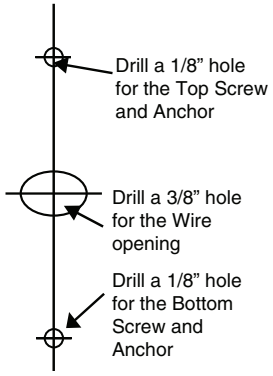


Figure D
Drill holes in wall

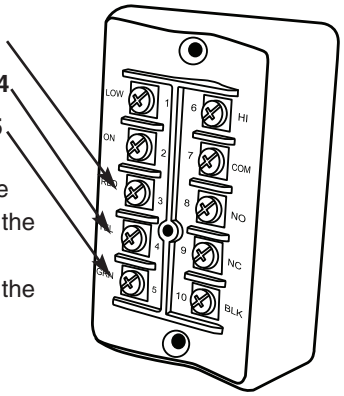


Figure E
On 150ERV and 200ERv, the Terminal Block is located on the ventilator. On 120ERV, the Terminal Block is located on the remote electrical box.
- Yellow to YELLOW #4
- Red to RED #3
- Green to GREEN #5

Use 3/20 wire.

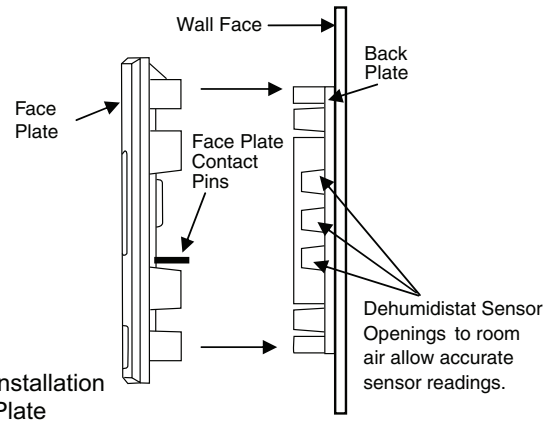


Figure F
Correct Installation of Back Plate

Installation and Operation of 20 Minute and 20/40/60 Minute Timers

Operating your Lifestyle 20 Minute or 20/40/60 Minute Timers

Press and release the *Select Button* to activate high speed override. The *High Speed Status Light* illuminates and the unit runs on high speed ventilation for 20 minutes.

The Lifestyle 20/40/60 Minute timers provide an extended override time of 20 - 40 additional minutes by pressing and releasing the *Select button*.

The *High Speed Status Light* dims after 10 seconds of run time.

The *High Speed Status Light* flashes during the last 5 minutes of the cycle.

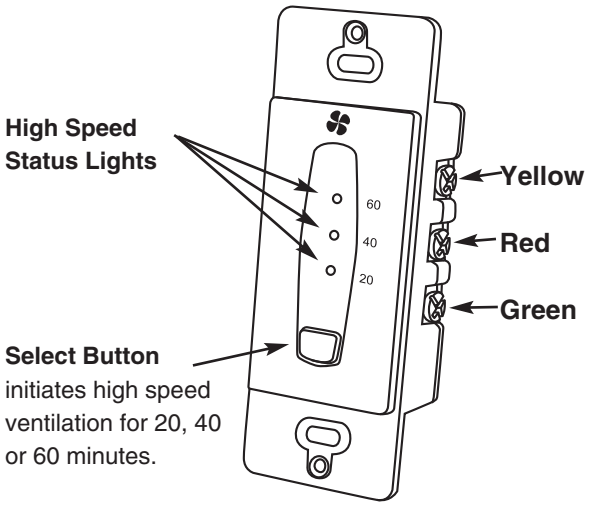
All timers connected to the unit illuminate for the duration of the override when the *Select button* is pressed.

Lockout Mode

Lockout Mode is useful for disabling the timers.

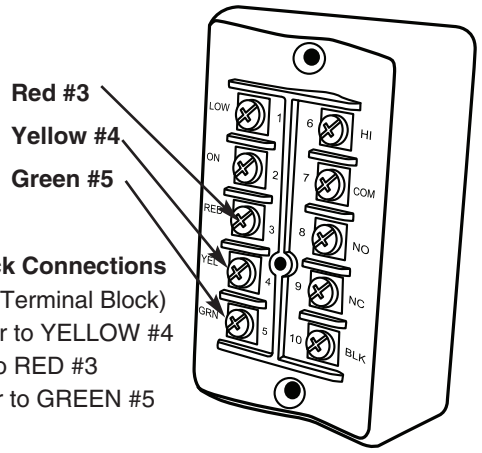
The timer can be set to lockout mode by pressing and holding the *Select button* for five seconds. After five seconds, the *High Speed Status Light* flashes; release the *Select button*. The timer is now in lockout mode. If the *Select button* is pressed during lockout mode, the *High Speed Status Light* momentarily illuminates; however, no override is initiated.

If lockout mode is initiated when the timer is activated, the timer continues its timed sequence; however, no further overrides are initiated. Lockout mode can be unlocked by pressing and holding the *Select button* for five seconds. After five seconds the *High Speed Status Light* stops flashing. Release the *Select button.* The timer will now operate normally.



NOTE ABOUT TIMERS

- **Timers mount in standard 2” x 4” electrical boxes.**
- **Wire multiple timers individually back to the unit.**
- **Use 3/20 low voltage wire**



Terminal Block Connections
(from Timer to Terminal Block)
Yellow on timer to YELLOW #4
Red on timer to RED #3
Green on timer to GREEN #5

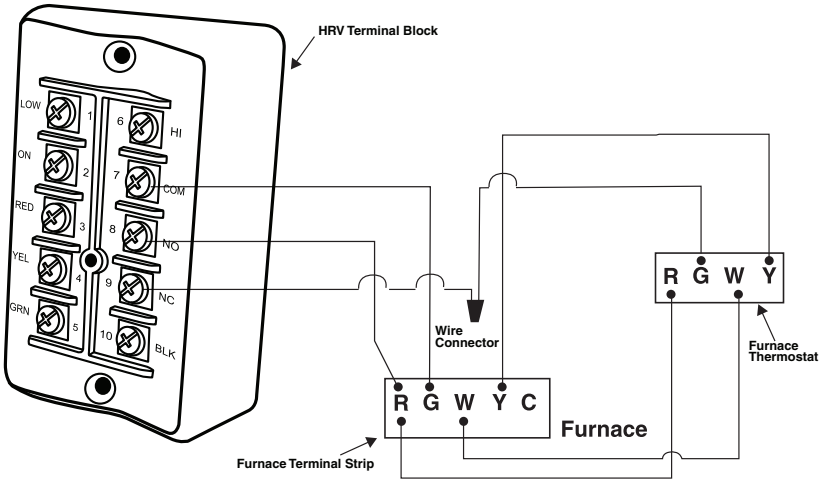
Interlocking the ERV to an Air handler/Furnace Blower

Connecting the ERV as illustrated will ensure the Air Handler/Furnace Blower Motor is operating whenever the ERV is ventilating.

The ERV must be interlocked to the Furnace/Air Handler with a Simplified Installation (Return/Return Installation) and should be interlocked with a Partially Dedicated Installation.

CAUTION

Consideration should be given to competing airflows when connecting the ERV in conjunction with an Air Handler/Furnace Blower system.

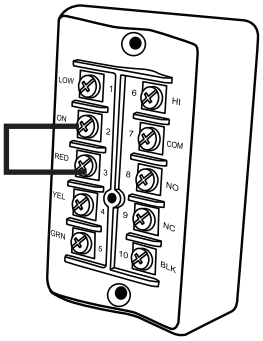


Setting "Standby" when using a Main Control

Select the OFF position on the Main Control to turn the ERV "fully-off". Timers and other controls do not function when the ERV is turned OFF.

The "fully-off" feature can be modified to "standby-off" by adding a jumper on the Terminal Block between 2 (ON) and 3 (RED).

"Standby" can also be achieved by setting the main control to the ON position and selecting speed 0*. Timers and additional controls will initiate high speed ventilation when activated.* Speed 0 is not available on all controls.



The Terminal Block
(located on the ERV

CAUTION

Building codes in some areas require "fully-off" functionality. Check with your local building authority before modifying the unit to "standby -off". Unintentional operation of the ERV by the end user may occur if the unit is modified from "fully-off" to "standby-off".

Operating the ERV without a Main Control and Adding Dry Contact Controls

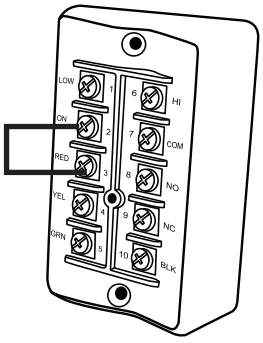
A jumper must be in place between 2 (ON) and 3 (RED) on the Terminal Block to activate the ERV for timers and/or dry contact controls.

Adding Dry Contact Controls

Low Speed - A jumper between 2 (ON) and 1 (LOW) initiates low speed ventilation.

High Speed - A jumper between 2 (ON) and 6 (HI) initiates high speed ventilation.

Dehumidistat - A dry contact for a dehumidistat is connected between 2 (ON) and 10 (BLK).



The Terminal Block
(located on the ERV

The ERV must have a Jumper in place between 2 (ON) and 3 (RED) on the Terminal Block when installing the unit without a Main Control.

Balancing the Air Flows (Applicable of All Models)

Balancing the air flows is critical to ensuring that the amount of air introduced from the outside of the building equals the amount of air exhausted to the outside of the building. If these two air flows are not properly balanced, the following issues may occur:

- A positive or negative pressure may occur in the house
- ERV may not operate at its maximum efficiency

Air Flow Measuring Gauges

The magnehelic gauge and the digital manometer are suitable instruments for the balancing of air flows.

A magnehelic gauge with a scale of 0 to .25" w.c. is suitable for accurately measuring air duct velocity. The value on the gauge will be velocity pressure. A digital manometer requires the ability to display differential pressures at 3 digits of resolution.

Gauge Attachments

When sampling an air flow, various attachments are available for use on a magnehelic gauge or digital manometer.

Consult with your Lifebreath Distributor for available options such as a pitot tube and flow measuring station.

The following illustration shows a magnehelic gauge with a scale of 0 to .25" w.c. with a pitot tube attachment. This combination will measure the system air velocity pressure accurately, regardless of the duct size or shape (either round or rectangular).

Balancing Preparation

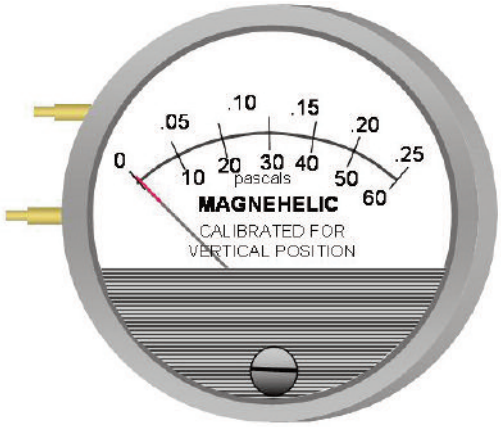
Prior to performing the air balancing procedure, perform the following steps:

- Seal the ductwork system
- Confirm the installation and proper operation of all the components of the ERV.
- Fully open the balancing dampers.
- Turn off all household exhaust devices (range hood, clothes dryer, bathroom fans).
- Set the ERV at high speed.
- Prior to balancing the unit, first adjust air flows in branch lines to specific areas of the house.
- If the outdoor temperature is below 0˚C (32˚F), ensure the unit is not running in defrost.
- Place the magnehelic gauge on a level surface and adjust it to zero.
- If the system is a Simplified or Partially Dedicated installation, operate the furnace/air handler at high speed.

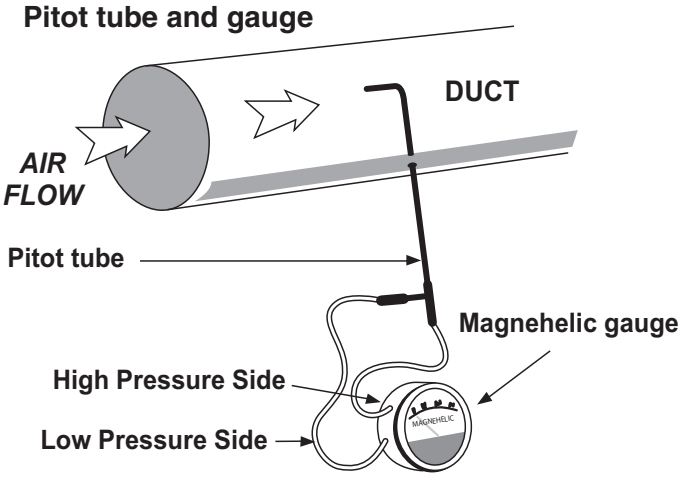
ATTENTION

Continuous, excessive, positive pressure may drive moist indoor air into the external walls of the building. Once inside the external walls, moist air may condense (in cold weather) and degrade structural components or cause locks to freeze.

Continuous, excessive, negative pressure may have several undesirable effects. In some geographic locations, soil gases such as methane and radon gas may be drawn into the home through basement or ground contact areas, and may also cause the backdrafting of vented combustion equipment.



Magnehelic Gauge with a scale of 0 to .25” w.c.



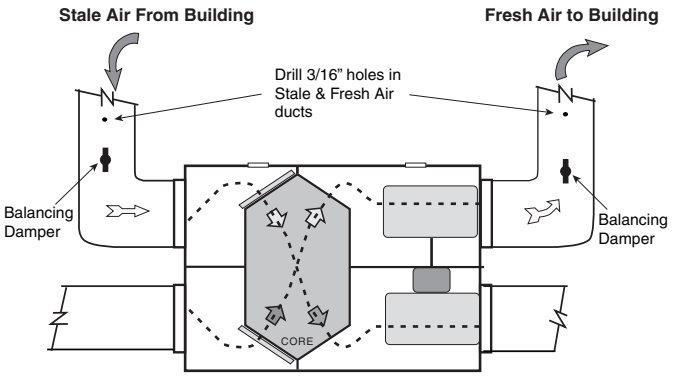
Pitot Tube Balancing Kit

Part # 99-167—includes Magnehelic Gauge (scale 0 to 0.25” w.c.), Pitot Tube, Hoses, Carry Case and Instruction page.

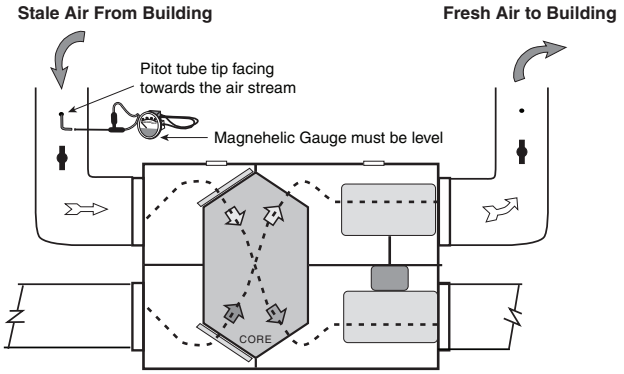
Balancing the Air Flows with a Pitot Tube (applicable to All Models)

STEP 1. Drill a 3/16" hole in the duct (ideally 3 feet downstream of any elbows or bends and 1 foot upstream of any elbows or bends) in the Fresh Air and Stale air streams.

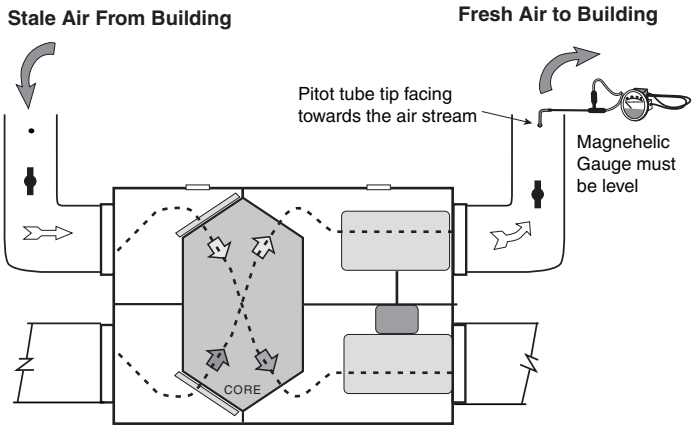
Note: The duct configuration in these illustrations may vary from the duct configuration on your model.



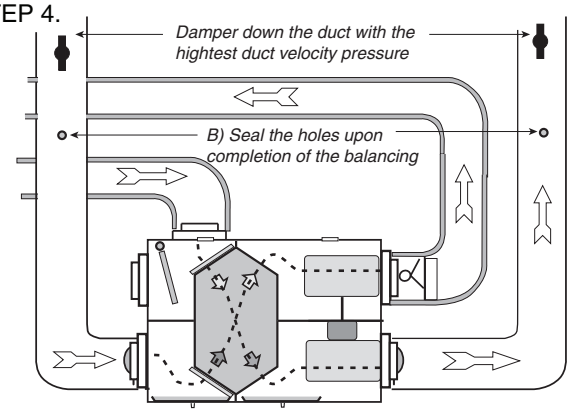
STEP 2. Insert the Pitot tube with the tip facing towards the air stream in the Stale Air From Building air stream. Move the Pitot tube around in the duct (facing towards the airflow) and take an average reading. Record the reading.


Stale Air From Building
Fresh Air to Building
Pitot tube tip facing towards the air stream
Magnehelic Gauge must be level
CORE

STEP 3. Repeat Step 2 to measure the Fresh Air to Building duct.


Stale Air From Building
Fresh Air to Building
Pitot tube tip facing towards the air stream
Magnehelic Gauge must be level
CORE

STEP 4.



A) Review the readings and damper down the duct with the highest duct velocity pressure. Repeat Step 2 and Step 3 until both ducts show identical readings. For this example, the Fresh Air to Building air stream has the highest duct velocity pressure.

Determining the cfm

After balancing the air flows, calculate the cfm flow rate.

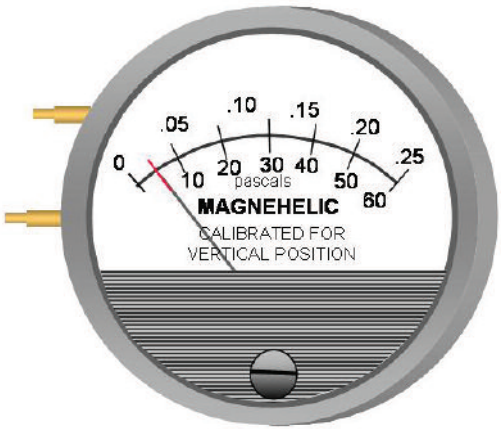
Example

This example shows how to determine the air flow for a 6" diameter duct. As shown in the illustration, the duct velocity pressure reads 0.025" w.c. on the magnehelic gauge. Use the chart that came with the magnehelic gauge to determine a duct velocity of 640 feet per minute for a duct velocity pressure of 0.025" w.c.

Cfm Calculation

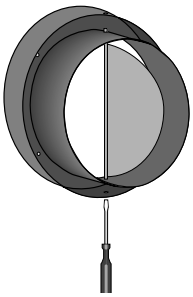
cfm = feet per minute x cross section area of duct
= 640 x 0.196
= 125

Cross Section Area of some common round duct sizes:
0.087 for 4" diameter duct
0.136 for 5" diameter duct
0.196 for 6" diameter duct
0.267 for 7" diameter duct

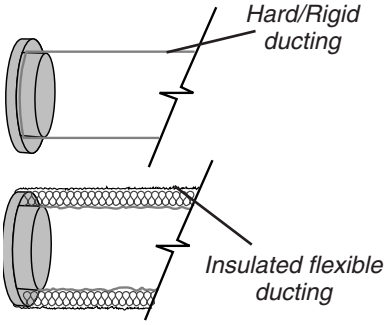


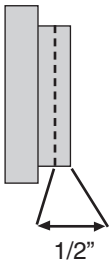
Magnehelic Gauge reading .025" w.c.

Balancing Collar Instructions



Push and turn with slotted screwdriver. Damper automatically locks when pressure is released.





When connecting ductwork to the collar, take note where screws are located. Screws should be located no further than 1/2” from outside edge of collar, so as not to impede operation of the damper.

Install with the dampers fully open. Damper down the duct with the higher air flow to equal the lower air flow. Refer to the Air Flow Balancing Procedures found in this manual.

NOTE

Installations where the ERV is ducted directly to the return of a furnace may require additional dampening on the *fresh air to building* duct.
This is due to the high return static pressures found in some furnace installations.

Maintenance Routine for ERV

1. Inspect Exterior Hoods at least once a month.

Make sure exhaust and fresh air supply hoods are not blocked or restricted by leaves, grass, or snow.

WARNING: *Blockage of hoods may cause an imbalance.*

2. Clean Air Filters (clean twice a year)

The standard filters are removable and washable.

a) open access door and slide core out.

b) remove filter clips if present.

c) once clips are removed filters can be taken off the core to be rinsed with water or a combination of mild soap and water. Do not clean in the dishwasher.

d) to re-assemble, place clean filter(s) (wet or dry) back into their positions against the core and return clips to their original position.

e) slide core back into its original position.

ATTENTION

- **Vacuum the ERV core or rinse with cold water**
- **Do not use cleaning solutions (such as soap) on the ERV Core**
- **Do not use a pressure washer on the ERV core**
- **Do not place the ERV core in a dishwasher**

3. Clean Core Twice a Year

a) open access door.

b) carefully grip ends of core and pull evenly outward. Core may be snug, but will slide out of the channel.

c) once removed from the cabinet remove filters.

d) **ERV core** - Vacuum the core or rinse with cold water. (DO NOT USE SOAP, DISHWASHER OR A PRESSURE WASHER.)

e) install the clean filters.

f) install clean core.

Note: *Core installation label on the outer end of the core.*

To install the clean core:

a) first mount the bottom flange of the core guide into the bottom H channel approximately 1/4" (6mm).

b) mount the left or right side flange of the core guide approximately 1/4" (6mm) followed by the other side.

c) mount the top flange of the core guide into the top H channel approximately 1/4" (6mm).

d) with all four corners in place and the core straight and even, push hard in the center of the core until the core stops at the back of the cabinet.

NOTE: *Core will appear to stick out from cabinet approximately 1/8" (3mm). This is by design to ensure the access door fits tightly against the core.*

4. Motors - Maintenance Free

5. Clean Duct Work if Required

The duct work running to and from the ERV may accumulate dirt. Wipe and vacuum the duct once every year. You may wish to contact a Heating/Ventilation company to do this.

6. General Maintenance - Twice a Year

Wipe down the inside of the cabinet with a damp cloth to remove dirt, bugs and debris that may be present.

7. Cleaning the Fans

Fans may accumulate dirt causing an imbalance and/or excessive vibration of the ERV. A reduction in the air flow may also occur. In new construction this may result within the first year due to heavy dust and may occur periodically after that over time depending on the outdoor conditions.

- unplug the ERV and open the service door.
- remove the core.
- remove ducting (metal and/or flexible insulated type) from the red and/or blue ports which are connected immediately in-line with the fan assembly.
- use a small brush, such as an old toothbrush or pipe cleaner, and insert first
  - (a) through the large opening of the fan assembly and then
  - (b) through the smaller opening in the end of the fan assembly.
- scrub individual fan blades until clean. Avoid moving or damaging balancing flat weight clip usually found on one or more of the fan blades.
- vacuum and wipe.
- reassemble making sure ducting is reattached firmly and insulation and moisture barrier are sealed and taped.

Before attempting this task, thought should be given to having a qualified service technician complete the service work.

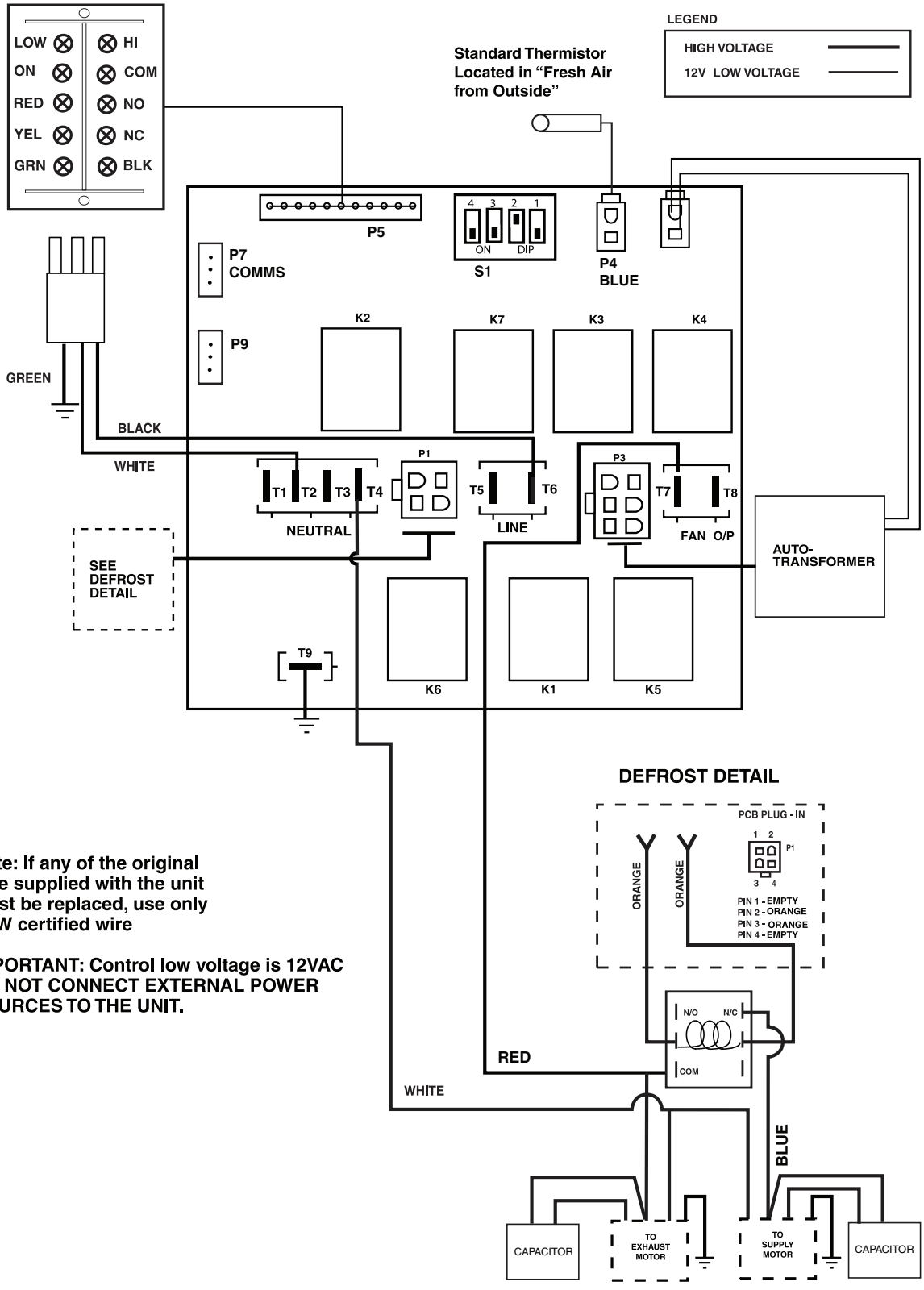
⚠ WARNING

Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, unplug the unit.

Troubleshooting your ERV System

SYMPTOM	CAUSE	SOLUTION
Poor Air Flows	• 1/4" (6 mm) mesh on the outside hoods is plugged • filters plugged • core obstructed • house grilles closed or blocked • dampers are closed if installed • poor power supply at site • ductwork is restricting HRV • improper speed control setting • HRV airflow improperly balanced	• clean exterior hoods or vents • remove and clean filter • remove and clean core • check and open grilles • open and adjust dampers • have electrician check supply voltage at house • check duct installation • increase the speed of the HRV • have contractor balance HRV
Supply air feels cold	• poor location of supply grilles, the airflow may irritate the occupant • outdoor temperature extremely cold	• locate the grilles high on the walls or under the baseboards, install ceiling mounted diffuser or grilles so as not to directly spill the supply air on the occupant (eg. over a sofa) • turn down the HRV supply speed. A small duct heater (1kw) could be used to temper the supply air • placement of furniture or closed doors is restricting the movement of air in the home • if supply air is ducted into furnace return, the furnace fan may need to run continuously to distribute ventilation air comfortably
Dehumidistat is not Operating	• outdoor temperature is above 15°C (59°F) • improper low voltage connection • external low voltage is shortened out by a staple or nail • check dehumidistat setting it may be on OFF	• dehumidistat is functioning normally (see "How the Dehumidistat Works" in this manual) • check that the correct terminals have been used • check external wiring for a short • set the dehumidistat at the desired setting
Humidity Levels are too High Condensation is appearing on the windows	• dehumidistat is set too high • HRV is undersized to handle a hot tub, indoor pool, etc. • lifestyle of the occupants • moisture coming into the home from an unvented or unheated crawl space • moisture is remaining in the washroom and kitchen areas • condensation seems to form in the spring and fall • HRV is set at too low a speed	• set dehumidistat lower • cover pools, hot tubs when they are not in use • avoid hanging clothes to dry, storing wood and venting clothes dryer inside. Heating wood may have to be moved outside • vent crawl space and place a vapour barrier on the floor of the crawl space • ducts from the washroom should be sized to remove moist air as effectively as possible, use of a bathroom fan for short periods will remove additional moisture • on humid days, as the seasons change, some condensation may appear but the homes air quality will remain high with some HRV use • increase speed of the HRV
Humidity Levels are too Low	• dehumidistat control set too low • blower speed of HRV is too high • lifestyle of occupants • HRV air flows may be improperly balanced	• set dehumidistat higher • decrease HRV blower speed • humidity may have to be added through the use of humidifiers • have a contractor balance HRV airflows
HRV and / or Ducts Frosting up	• HRV air flows are improperly balanced • malfunction of the HRV defrost system	• Note: minimal frost build-up is expected on cores before unit initiates defrost cycle functions • have HVAC contractor balance the HRV • ensure damper defrost is operating during self-test
Condensation or Ice Build Up in Insulated Duct to the Outside	• incomplete vapour barrier around insulated duct • a hole or tear in outer duct covering	• tape and seal all joints • tape any holes or tears made in the outer duct covering • ensure that the vapour barrier is completely sealed
Water in the bottom of the HRV	• drain pans plugged • improper connection of HRV's drain lines • HRV is not level • drain lines are obstructed • HRV heat exchange core is not properly installed	• ensure O-Ring on drain nozzle sits properly • look for kinks in line • check water drain connections • make sure water drains properly from pan

CAUTION: ELECTRICAL CONTROL PANEL, SERVICE BY ELECTRICIAN ONLY



Note: If any of the original wire supplied with the unit must be replaced, use only TEW certified wire

IMPORTANT: Control low voltage is 12VAC DO NOT CONNECT EXTERNAL POWER SOURCES TO THE UNIT.

59-RNC120F-W

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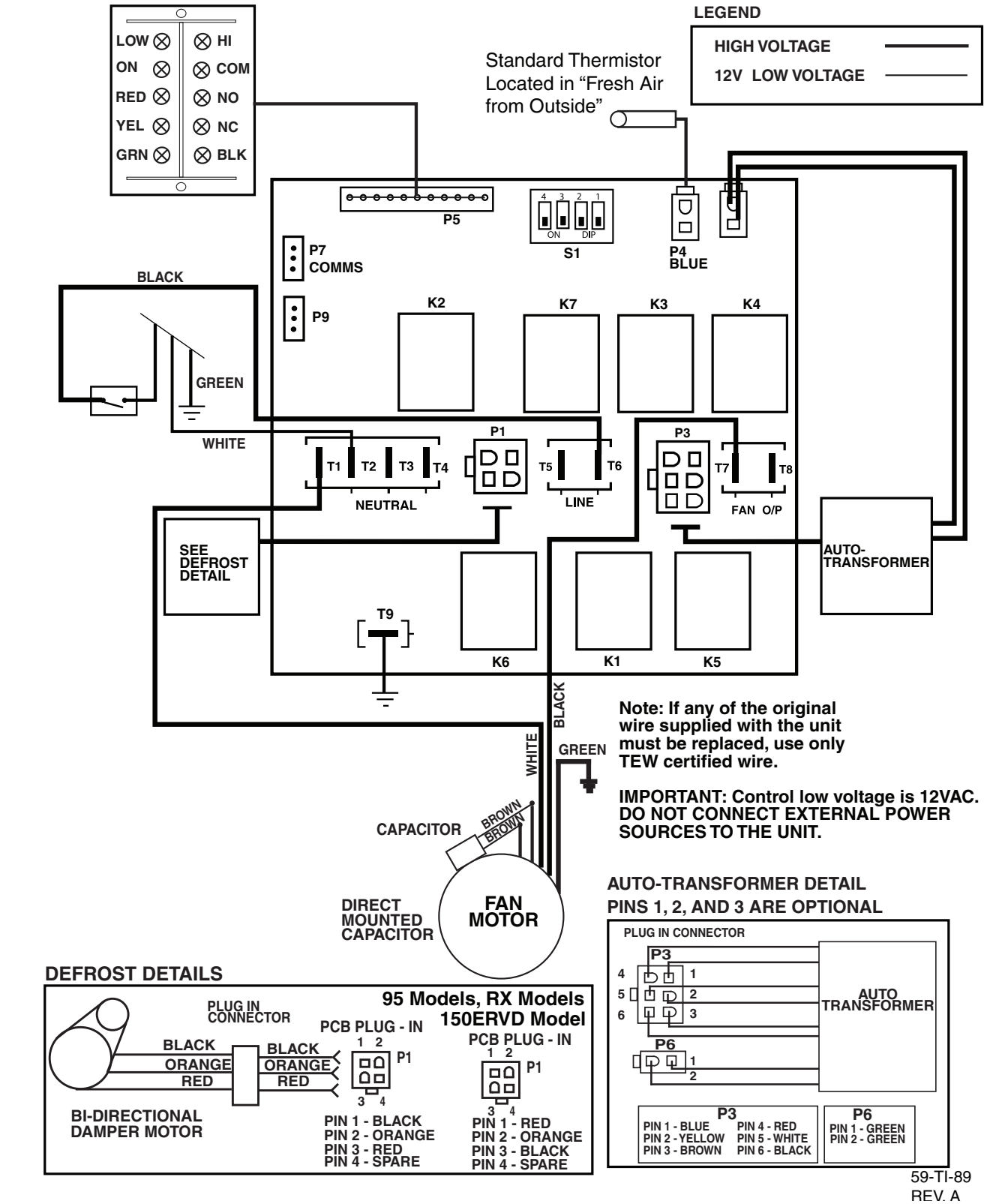

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REV. A

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ISO 9001 REGISTERED

LEAVE FOR HOMEOWNER

TO BE COMPLETED BY CONTRACTOR AFTER INSTALLATION

Installing Contractor _____Telephone / Contact _____

Serial Number_____Installation Date _____

Model _____

Register for your warranty at www.lifebreath.com

Airia will require the Model and Serial Number to register the unit.

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